Prof. Dr. MOHINI SAIN

Phone (B): 416-946-31-91

PhD, P.Eng, Dr.hc. FRSC (UK), FACE

Currently Dean of Faculty of Forestry at University of Toronto, Dr. Sain specializes in advanced nanocellulose technology, biocomposites and bio-nanocomposites at the University of Toronto, Faculty of Forestry. He is cross- appointed to the Department of Chemical Engineering and Applied Chemistry. He is a fellow of Royal Society of Chemistry, UK and Fellow of Academy of Canadian Engineers.

Prof. Sain is globally known for his pioneering work on Biocar Initiative and in 2009 issue of *Toronto Life* magazine featured his idea as the second best among 25 World Changing Ideas from the Smartest Torontonians. Dr. Sain holds several awards; few recent ones are Plastic Innovation Award and KALEV PUGI Award for his innovation and contribution to Industry. Author of more than 400 papers and is designated as a hi-cited researcher, Prof. Sain hugely contributed to the society at large by translating research to commercialization. He has tens of patents and is world known for his expertise to transform research idea into commercialization. Until now he has done more than 30 technology transfer to industry and created new companies for making products ranging from packaging to automotive to building construction materials. Prof. Sain's research activities are documented by global television networks, magazines and radio interviews.

He is also co-author of world's first book on Cellulose nanocomposites and has co-edited a number of books. He is involved in many global strategic research policy developments, standardization, research funding strategic councils in advisory role. He is highly acclaimed engineering consultant in materials engineering and works with almost 100 companies worldwide.

Prof. Sain's role as a pioneer in creating non-profit organizations that is highly meaningful for society at large. He is the founding member of Canadian natural Composite Association, Ontario BioAuto Council and many more. He has championed world's WPC industry by actively perusing his vision of global important of this green and emerging industry. He chaired many of these global committees and helped nurturing this industry to over billion dollar market.

ACADEMIC QUALIFICATIONS

- PhD (Chemical Engineering), Technical University (CZ)

1988

Thesis: Contribution towards Covulcanization of Natural Rubber-Polyolefin Blends
Supervisor: Prof. Ing. Josef Beniska, DSc.

- Master of Technology, MSc.E (Polymer Technology), IIT

1983

Thesis: Determination of Moisture Diffusivity Coefficient in Coagulated Natural Rubber Slabs. Supervisor: Prof. D. K. Guha

- Bachelor of Technology, BSc.E, Calcutta University

1981

Undergrad Thesis: "Enhancing Strength of Elastomer Blends using Cork waste"

- Bachelor of Chemistry (Honours), BSc. (Hons), Calcutta University

1976

ACADEMIC AND INDUSTRIAL APPOINTMENTS

2003 - Present

Dean, Faculty of Forestry, University of Toronto
Professor (University of Toronto)

- Cross-appointment: Chemical Engineering and Applied Chemistry, University of Toronto
- Director, Centre for Biocomposites and Biomaterials Processing (August 2004)
- Adjunct Professor, Lulea Technical University; Lulea, Sweden
- Adjunct Professor, Institute for Environmental Studies, University of Toronto
- Adjunct Professor, Department of Chemical Enginnering, University of New Brunswick, University of Waterloo and University of Guelph
- Adjunct Professor, King Abdulaziz University, Jeddah, Saudi Arabia
- Chief Science Officer (CSO) BioAuto Council, Canada
- Founder President, Director and Secretary, Greencore Composites Inc.
- Founder President, GreenNano Technologies Inc.

May 1999 - December 2003

Associate Professor (University of Toronto and University of New Brunswick)

- Appointment with tenure, Faculty of Forestry, University of Toronto
- Cross-appointment, Chemical Engineering and Applied Chemistry, University of Toronto
- Adjunct Professor, Institute for Environmental Studies, University of Toronto
- Adjunct Professor, Department of Chemical Engineering, Univeristy of New Brunswick
- Appointed to University of Toronto Graduate Faculty
- Appointment in April 1999, University of New Brunswick (with the condition that I be considered for promotion to Full Professor in 2001
- Department of Chemical Engineering, University of New Brunswick
- Associate Chair, Pulp and Paper Research and Education Centre (1999-2001)
- Director of Graduate Studies of Department of Chemical Engineering (1999-2001)
- Appointed to UNB Graduate Faculty

1997-1999

Tenured Research Faculty - Agent de recherche (Pulp and Paper Research Centre, Universite de Quebec a Trois Rivieres)

- Permanent Appintment (tenure) in June 1997

1996- 1997

Research Associate and adjunct member (Pulp and Paper Research Centre, University of Toronto)

- 10 months – appointment on research leave from University of Quebec

1993- 1996

Agent de recherche, **Graduate Faculty Appointment** (Pulp and Paper Research Centre, Universite de Quebec a Trois Rivieres)

1994 to 1995

Polymer Scientist (Aspen Research Corp., a subs. of Andersen Corp., St. Paul, USA)

- on research leave from University of Quebec

AWARDS, FELLOWSHIPS AND OTHER HONOURS

- Fellow of Canadian Association of Engineers, 2013
- Canadian Plastics Industry Innovation Award, 2012
- Fellow of Royal Society of Chemistry, UK, 2012
- Pugi innovation Award 2010; Society of Plastic Industries (National)
- Doctorate honorary cosa , 2010, Technical University, Bratislava (International)
- Senior Grant Achiever Award 2007-2008 (International)
- SPE- Significant Contribution to Industry Achievement Award, 2002, USA
- NSERC-Industry- University SYNERGY AWARD, 2001, NSERC & Conf. Board of Canada
- Outstanding Researcher, INS Recognition, 1994, USA
- NSERC International Fellow, 1991, Govt. of Canada
- Czechoslovak Govt. Fellow, 1985-1988, INCAB Prize, 1983, India
- Indian National Scholar, 1973

EDITORIAL ROLE

- Member of Board, Journal of Bioresource, Journal of Bio-based materials and Bioenergy
- Co-Editor : Cellulose Composite for Electronic Devices
- Co-Editor : Book on “Lignin in Polymer Composites”
- Co-Editor : Book on “Wood Composite”
- Co-Editor : Book on “Wood-Polymer Composites; Biofiber Reinforcements in Composite Materials”
- Co-Editor : Book on “Bio-nanocomposites from Renewable Materials”
- Co-Editor : Four volumes(I to IV) Hanbook of Green Materials
- Co-Editor: “BioResources”, an Online Journal Devoted to the Science and Engineering of Biomass from Lignocellulosic Sources for New End Uses and New Capabilities

PROFESSIONAL MEMBERSHIP

- CPPA- Canadian Pulp and Paper Association (Technical section)
- PEO- Professional Engineer of Ontario
- SPE- Plastic Society
- Tappi- Technical Association of Pulp of Paper Industries
- Canadian Natural Composite Council
- American Chemical Society
- CAE – Canadian Academy of Engineering
- Royal Society of UK

TEACHING

I believe in teaching skills that initiate, encourage and nurture creativity among students, provide unlimited scope to express their ideas by solving problem assignments and reviewing research papers critical to the subject matters. I also strongly encourage students to develop technical communication skill by providing them opportunities to present their research papers and scientific review related to advanced research issues in class room environment. My conceptual approach combined with integrated knowledge sources allows promoting a vibrant learning environment in class room as well as in out-of-class student activities. My approach to involve students in my own research projects that relates to the practice of science and engineering principles delivered in class. I encourage students to involve in group and collaborative activities to overcome challeges that demands multi-facet skills.

ACADEMIC TEACHING EXPERIENCE IN RECENT YEARS

(1997-2005) Program and Course Development
University of Toronto
In co-operation with Pulp and Paper Centre and Department of Chemical Engineering, I prepared the required documentations for a New M.Eng. Program Development via Distant Education at University of New Brunswick. Subsequently I acted as a Coordinator of the program during my tenure at the same university.

- FOR1288H WOOD COMPOSITES PROCESSING
- FOR1286H NATURAL FIBRE PRODUCTION
- FOR1292H LONG TERM PERFORMANCE & DURABILITY OF WOOD (With Paul Cooper and Ning Yan)

Courses Teaching (Undergrad and Grad)
University of Toronto
- F300S: Forest Products in Sustainable Forestry 26L, 26P **(Arts & Science Faculty)**
- Green Processes Chemistry **(Arts & Science Faculty)**
- FOR 424 Design and Manufacturing of Innovative and Sustainable Materials (**Eng. Faculty**)
- FOR 420 Natural Composites Processing (**Arts and Science**)

GRADUATE COURSES
2001-2015 University of Toronto
- FOR1288H Green Composite Processing
- FOR 1282H Chemistry of Lignocellulosics

1997-2001 Department of Chemical Engineering, University of New Brunswick
- ChE 5913 Pulp production (3 cr)
- ChE 6811 Introduction to research methods (2 cr of 5 cr)

Pulp and Paper Research Centre, Department of Engineering, University of Quebec
- CHM1002 Projet de fin d'etudes (Final year project, 4 cr)
- GNC-1024 Activites de synthese en genie chimique (Chemical Eng. Thesis project) (4 cr)

Pulp and Paper Research Centre, Department of Engineering, University of Quebec

- CHM1002 Projet de fin d'etudes (Final year project, 4 cr)
- GNC-1024 Activites de synthese en genie chimique (Chemical Eng. Thesis project) (4 cr)

GRADUATE SUPERVISIONS

Completed: 7 MSc, 20 PhD

In Progress: 1 MSc, 12 PhD

Other supervision: Research Assistants: 135
Undergrad Research Training: 96
Post Docotral Fellows: 43
Research Associates: 14
Research managers and technicians: 11

SELECTIVE EXAMPLES OF STUDENTS RESEARCH SUPERVISION

Graduate Student Supervised (last six years)/PhD student supervised (last five years)

Degree	**Name of Student**
PDF	Samir Konar (Toronto)
PDF	Mohmmad Pervaiz (Toronto)
PDF	Dr. Rambabu Nedunuri
PDF	Ruijun Gu
PDF	Saraute Ummartyotin (Toronto)
PDF	Dr. Shawn WANG (Toronto)
PDF	Shiang Law (Toronto)
PDF	Dr. Subrata Bandhu Ghosh (Toronto)
PDF	Dr. Sanchita Banerjee (Toronto)
PDF	Latchmi Raghunanan
PhD	Maryam Edalatmanesh (Toronto)
PhD	Sally Krisgtin (Toronto)
PhD	Kevin Sung(Toronto)
PhD	Lichi Chang (Toronto)
PhD	Ryan Kim (Toronto)
PhD	Tayebeh Bezhad (Toronto)
PhD	Bei Wang (Toronto)
PhD	Arturo Rodridgue (Toronto)
PhD	Sreekumar Janardhan (Toronto)
PhD	Smith Sundar (Toronto)
PhD	Abdul Awal(Toronto)
PhD	Hamideh Hajiha (Toronto)
PhD	Suhara Panthapulakkal (Toronto)
PhD	Mustafa Kazabi (Toronto)
PhD	Muhammad Ferhan (Toronto)
PhD	Pei Yu Kuo (Toronto)
PhD	Javad Sameni (Toronto)
PhD	WaiDan Ding (Toronto)
PhD	Birat KC (Toronto)
PhD	Robenson Cherizol (Toronto)
PhD	Sossina Gezahehn (Toronto)
PhD	Nalini Ranganathan (CIPET, India)

PhD	Rajashekaran (CIPET, India)
PhD	Rajesh Panda (CIPET, India)
PhD	Rajkumar Subbaiah (CIPET, India)
PhD	Shaghayegh Armioun (Toronto)
PhD	Antimo Graziano (Toronto)
PhD	Bruno Senamaia (Toronto)
PhD	Otavio Titton Dias (Toronto)
PhD	Nikolina Frisk (Toronto)
PhD	Viktoriya Pakharenko(Toronto)
MscF	Maria Semeniuk (Toronto)
MScF	Chumbei Huang (Toronto)
MSc.E	Zhuang Wang (UNB)
MSc.	Leah Drapper (Toronto)
MSc.E	Alaah Saleh (Waterloo)
MSc.E	Sylvain Allete (Royal Millitary College)
MSc	Sadia Khan (Toronto)
MSc	Kaustav Nag (Toronto)
PhD	Tyebeh Bezhad (2002-2006)
MSc.E	Deepesh Gulati (Toronto)
MSc.E	Zhuang Wang (UNB)
MSc.E	R. Jaykumar (UNB)
MSc.E	laah Saleh (Waterloo)
MSc.E	Sawn (Royal Millitary College)

Till 2006 – PhD – 5, MscE – 15, MscF - 6

PhD students supervised (University of Quebec) 1997-2002

PhD	QiYi Hu (first two years) 1997-2002
PhD	Bruno Chabot (1995-1998) (guest co supervision)

CONTRIBUTION TO INDUSTRIAL TRAINING AND WORKSHOPS

Participated in more than 53 workshops and industial training program for last 5 years. Notable workshops are:

- "Lightweight and Sustainable Materials Research", APLW Workshop, Windsor ON, April 27th, 2016
- CFREF project planning workshop in Fredericton, February 2016
- Canada-Japan-Vietnam workshop on composites, Ho Chi Minh, Vietnam, August 2016
- Ontario-China Biomaterial Workshop, December 2015
- Brazil- ISTP Workshop on Biomaterials Prospect; University of Toronto, September, 2011
- University Of Toronto – CTBA France Collaborative Workshop, Biomaterials in France; March 2011
- WPC International Conf, Madison, May 2011
- Brazil- Ministry of Research and Innovation (MRI) Workshop on Biomaterials Prospect; University of Toronto, October, 2010
- University Of Toronto – CTBA France Collaborative Workshop, Biomaterials; May 2010
- WPC International Conf, Toronto, May 2010
- University Of Toronto – CTBA France Collaborative Workshop, Biomaterials; May 2008
- Finland- Ministry of Research and Innovation (MRI) Workshop on Ontario Biomaterials Prospect; University of Toronto, October, 2008

•T. Behzad and M. Sain, "Development of Natural Fiber Composites for Automotive Applications", OCE Conference, February 2006.
•Krigstin, S. and M. Sain. 2006. Utilization of Recycled Papermill Sludge for Value-Added Bio-Products. Ontario Centres of Excellence, Discovery 2006 - Bridging the Innovation to Commercialization Gap. Poster Session, February 7, 2006
•Sixth Joint Canada-Japan Workshop on Composites, Toronto, Canada, Aug 24-26, 2006

ADMINSTRATIVE CONTRIBUTION (UNIVERSITY) University of West Indies: 1990-1991
* Member of Curriculum Development Committee
* Member of Graduate Research Committee

University of Quebec: 1995-1998
* Member of Integrated Pulp and Paper Research Centre Technical development committee
* Member of Graduate Research Committee

University of New Brunswick: 1999-2001
* Associate Chair of Pulp and Paper Research Centre
* Graduate Director of Department of Chemical Engineering
* Involved in day-to-day administrative activities of the centre including budgeting, research program development, industrial liason, representing centre in various research and job related activities involving provincial ministry, regional industry, university administration, infrastructure development
* Serves as jury on numerous reports, master and PhD thesis examination boards
* Served as chair on several Master and PhD examination boards
* Served as jury or external examiner on many PhD thesis examination boards
* Actively involved in Invited Lecturer program and calendar development
* Served as member of departmental promotion and tenure committee
* Served as member of Chemical Engineering Practice school curriculum development
* Served as member of student-teacher opinion exchange committee
* Serve as Examiner for Ontario Professional Engineers
* Serve as external reviewer for NSERC projects
* Serve as reviewer of many international government granting committees
* Serve as technical article reviewer for many international journals
* Served as Canadian Pulp & Paper Association committee member in recycling section

University of Toronto
* Chair of Faculty of Forestry Security and Safety at work committee
* Director, Centre for Biocomposites and Biomaterials Processing
* Serves as jury on numerous reports, master and PhD thesis examination boards
* Served as chair on several Master and PhD examination boards
* Served as jury or external examiner on many PhD thesis examination boards
* Actively involved in teaching calendar development
* Served as member of departmental promotion committee
* Represented Faculty in Graduate Council Meeting: Division 4
* UTFA council member

Board Member, Reviewer and Examiner
* PhD Examiner: Chemical Engineer, University of Toronto, University of Quebec, University of New Brunswick
* Reviewer: Professional Engineers of Ontario, Examination review committee
* Many International and National Propoal and Award Review and Assessment Board
* Members of Board of Industry and National Non-Profit Organizations
* Canadian Nanotechnology Standardization Council Board Member

New International Program Development

- Played pivotal role in establishment of **Centre for Biocomposites and Biomaterials Processing** at University of Toronto. The core facility of the centre will be located in the Faculty of Forestry, St. George Campus.

- The centre is the hub of a multi-disciplinary and international collaboration, which at present includes **10 Canadian Universities** (examples, Queens, McMaster, McGill, Quebec, UNBC), **six Canadian Research Institutions** (examples: Materials and Manufacturing Ontario, Ontario Agro-Food Technologies, Alberta Research Council, Forintek, Canadian Forest Service and Natural Resource Canada), **ten international institutions** from Europe, Asia and the US and more than **40 Industry partners**. This collaboration will expand in coming years bringing in more academic, research and industrial institutions around the globe.

- The infrastructure and its operation is funded by Canada Foundation for Innovation's (CFI) Innovation and New Research Opportunity programs, bringing a total funding allocation close to **$6.8 Million** (with 20% of this contribution coming from Industry, 40% from CFI and rest is matched by the provincial innovation initiative). Research operating fund of this centre has been secured for the years to come through diverse industrial, provincial and federal research funding initiatives amounting to more than $1.0 Million dollar/year. Major research operational funds are provided by NSERC, Network of Centre of Excellence-Auto-21, Materials and Manufacturing Ontario, Natural Resource Canada, Indutry Research Grants Ontario Ministry of Agriculture and Food.

- The mandate of the centre is to nurture and enhance Canada's leadership role in the industrial biomaterials innovation, developing highly qualified professionals and entrepreneur as well as , serve the emerging industrial biomaterials industry in launching new products, helping in short-time problem solving and providing expert knowledge. This centre is one of a kind in the world to meet the future challenges of environmental safety, social responsibility and economic growth of world's one of the largest Forest- based natural resource enriched country such as Canada. Centre provides an alternative approach to Canadian Forest and Agro-Sector to emerge as a global leader in strengthening our economy by sustainable technology development.

RESEARCH PORTFOLIO

RESEARCH DOMAIN

• Nano Bio-Technology & Mass Production of Nano natural fibre and Cellulose Nanocomposites

• Natural Fibre Composites Building Construction and Automotive Application

• Fundamental Research on Processing & Long Time Performance of Natural Composites Based on BioComposites (PLA-PHB Wood Resin)

• Fundamentals of Gas Diffusion in Nano-Biopackaging

• Biotechnology of Carbohydrates, Proteins and Biofibres

Current Research

Isolation of Nano-fibres from Root Crops and Natural Fibres (NSERC-Discovery)

The objective of the research is to develop high performance nano sized microfibril manufacturing process for reinforced natural composites using root crops and agro-biomass. Natural fibres are gaining a renewed interest, especially as a glass fibre substitute, partly due to ecological concerns. Fibres from wheat, corn, hemp, flax, sisal, and jute and root crops hold potential for such innovations. Our focus is on the fibres, which are on much smaller scale and have 5-50 nm diameters and are thousands of nanometer long. Research in our laboratory showed that the aspect ratio of the nano-sized microfibrils is much higher than the initial long fibres, hence these nano-sized microfibrils could contribute towards producing materials of very high strength at a low cost in an environmentally friendly man.

Conversion of Plant Exacts to Bioplastics (BIOCAP-NSERC-Strategic)

This project examines the effect of biological strains (fungal) on depolymerization and polymerization of sugar, pectins and other hemicelluloses obtained as a residue from nano- biofibre isolation process. We are particularly interested in isolating enzymes that are effective in mass bioconversion of pectins to high molecular weight polymers. One of the demerits of natural polymers including starch is their poor strength properties. Recent research in our laboratory on modification of starch using novel strains isolated from tree bark have demonstrated the potential of some enzymes to undergo bio-chemical reaction with starch in presence of nitrogen containing organic compounds. This preliminary observation shows great potential to modify starch with functional monomers to enhance strength properties, which may lead to the development of high performance consumer bioplastics similar to that of poly-lactic acid.

Nano-biocomposite Manufacturing Process Fundamentals (ORDCF)

The aim of this project is to develop novel biomaterials by better understanding the structure of composite materials in molecular level and then designing those materials for high performance and for biomedical applications. Emphasis is given to dispersion of nano-scale fibres in bioplastics by better understanding the thermodymanics of mixing and separation. Initial study indicated that mechanical properties of nano-biocomposites are much higher than conventional composites and they are much more bio-stable but easy to bio-degrade.

Isolation, Purification and Characterization of Biocellulose (OMAF)

This research program is to develop plant and tree isolated fungi-based biological cellulose and provides essential information to support bioconversion research to develop nano- biofibrils from agro-and forest biomass residues. The aim is to modify the fibre surface to render it thermodynamically more compatible to plastics and biopolymers. This bio- fibres will be used for the development of high performance natural/bio-composites and nano-composite that would compete with the existing fossil fuel based products in automotive aerospace and medical device application

Software Development for Creep Prediction of Natural Fibre-plastic Composites for Building, Construction and Automotive Applications (NSERC-Strategic)

Natural fibre-plastic composites are used under stress/load. Creep in natural fibre thermoplastics composites aggravates with temperature and moisture. In this project, we propose to predict long term creep deformation in the nonlinear region with modified WLF equations. For the same purpose, we are developing a mathematical model with Schapery's model incorporating weathering parameters. This model is also being validated experimentally and we will be able to extend the model to predict creep for composites with diverse compositions. It is envisaged that this model will predict long-term durability of natural fibre composites.

Isolation, Purification and Characterization of Biocellulose (OMAF)

This research program is to develop plant and tree isolated fungi-based biological cellulose and provides essential information to support bioconversion research to develop nano- biofibrils from agro-and forest biomass residues. The aim is to modify the fibre surface to render it thermodynamically more compatible to plastics and biopolymers. This bio- fibres will be used for the development of high performance natural/bio-composites and nano-composite that would compete with the existing fossil fuel based products in automotive aerospace and medical device application

Software Development for Creep Prediction of Natural Fibre-plastic Composites for Building, Construction and Automotive Applications (NSERC-Strategic)

Natural fibre-plastic composites are used under stress/load. Creep in natural fibre thermoplastics composites aggravates with temperature and moisture. In this project, we propose to predict long term creep deformation in the nonlinear region with modified WLF equations. For the same purpose, we are developing a mathematical model with Schapery's model incorporating weathering parameters. This model is also being validated experimentally and we will be able to extend the model to predict creep for composites with diverse compositions. It is envisaged that this model will predict long-term durability of natural fibre composites.

Manufacturing (OMAF)

Wheat straw and corn stover can perform as a viable alternative for the manufacture of fibrous composites for automotive and building applications. However, durability and incompatibility of these straws with the diversified plastic substrates remains as a challenge to their effective use in thermoplastics. The overall objective of the project is to develop a novel bioconversion technology using fungi/microbe to convert these agricultural plant residues to a reinforcing fibrous resource and hence to develop composites for automotive and building applications with enhanced durability and improved mechanical properties. It is anticipated that this research will develop new industrial fibrous raw material, which could be used to manufacture lightweight, durable green composites for building and automotive applications. These fibres will have a high potential to compete with the fossil fuel based synthetic fibres, increase farmers income and will reduce emissions considerably.

Biocomposite Film for Packaging Application (NSERC-Discovery)

This research aims at developing novel cellulose micro-fibril dispersed biopolymer films, and understanding diffusion behaviour of oxygen and moisture through these composite films. Barrier properties of these bio-composite films towards oxygen and moisture are under investigation. A diffusion based permeability model developed to predict the permeability through these films. Application are targeted toward food and medical packaging materials using bio-plastics typically PLA and PHB.

Effects of Environmental Factors and Fungal Decay on Mechanical Properties of Wood and Non-wood Plastic Composites (NSERC-Strategic)

The main objective of this study is to develop a long term durability predictive model for wood and non-wood plastic composites. In the short term we will measure the change in mechanical properties of weathered samples of the composites exposed to accelerated tests in the laboratory. In the long term, we will also measure the change in mechanical properties of outdoors weathered samples. We are developing a method to evaluate fungal decay on non- wood flour materials.

Development of a Process to Manufacture a High Performance Bio-based Composite by SMC, RTM and Thermoforming (NCE-Auto-21)

In this study, a new environmentally friendly polyester, wood, polylactic acid, acrylic resins are used as a matrix to manufacture a biocomposite. The purpose is to develop a new high- performance bio-composite for automotive and medical applications by using injection molding, sheet molding (SMC), resin transfer molding (RTM) or compression molding process. Resin transfer molding (RTM) is a very common process in the composite industry allowing the production of a multitude of shapes at low pressure. In this project hemp/kenaf fibre-unsaturated polyester composites were manufactured using a RTM process.

High Performance Natural Fibre Thermoplastics for Auto and Building Industry by Injection, Extrusion and Compression processes (NCE-Auto-21)

The main objective of this multi-dimensional research project is to develop high performance natural fibre composites by understanding and implementing basic design concepts of fibre morphology. For the first time, critical fibre length of natural fibres has been estimated for high performance composites by evaluating interfacial shear stress (ISS). Subsequently, comprehensive modeling based on fibre length and content has been achieved to predict strength and stiffness of the composite. The most important aspect of this research project is the development of a unique innovative method of utilizing hybrid surface modified natural fibres to achieve very significant increase in impact properties of product, which is the main demand of the time from auto industry. This one-step and simple method not only saves considerable cost in terms of raw material but can be also used for value added utilization of many other recycled and virgin cellulose fibres.

Development of High Performance Natural Fibres for Composite Manufacture (NCE- Auto21)

Natural fibres are bundles of individual strands of fibres. When fibres are subjected to heat treatment much above the glass transition temperature of lignin, lignin gets softened and individual fibres are released. The strength of the fibres is greater than the fibre bundle and the aim of the study is to produce these individual fibres by means of thermo mechanical process and use them for composite manufacturing.

Hygroscopicity and Dimensional Stability of Natural and Wood Fibre Reinforced Plastic Composites (NSERC-Strategic)

Research work is about the moisture related properties of natural/wood fibre reinforced plastic composites. The dimensional stability of commercial decking products is investigated under fluctuating environmental conditions. The percolation and diffusion behaviour of water and vapor absorption inside the composite matrix would be used.

Study and Evaluation of a New Poly-cationic Additive in Paper Coating Colour for Ink- jet printing (NSERC-CRD-Industry)

A coating formulation typically contains pigment commonly amorphous silica or precipitated calcium carbonate, a binder usually polyvinyl alcohol and other additives like cationic dye fixing agent and antifoaming agent. One of the widely used cationic additives in coating formulation is the polydadmac. Despite its wide use, polydadmac imparts few undesirable properties the coating due to its molecular structure. The objective of this project is to evaluate and study an alternative polycationic additive that can suitably improve the overall performance of the coating formulation.

Isolation and Identification of Minor Toxicants in Pulp and Paper Mill Effluents (Industry)

Toxicants in Pulp and paper mill effluents such as resin acids, fatty acids (RFA), and polychlorinated organic compounds can cause acute toxicity, which kills fish and other m marine life. Recently, greater attention has been focused on chronic toxicity, i.e., the effects of effluents on the growth and reproduction of fish. Studies using effluents from different pulping processes show that the causative compounds can be natural wood extractives. The objectives of this research are to isolate and identify the minor toxic components from woody materials and relate their chronic toxicity to pulp mill

effluents.

Enhancing Performance and Processibility of Extruded Natural Fibre-high Density Polyethylene Composite Profiles (MMO)

Natural Fibre Plastic compatibility is enhanced chemically by addition of coupling agents consisting of appropriate hydrophilic and hydrophobic end groups. However, coupling agents have been found to have contributed adversely to processibility particularly in extrusion process. Our research is focused on evolving novel chemistry of coupling agent and internal lubricant system for agro-fibre-based high density polyethylene composite. The research thrust is on improving microstructure through fibre-polymer interface adhesion for improved properties of the final composite profiles while imparting favourable rheological characteristics during extrusion of the melt. This study would also develop microstructure property relationship model for extruded composite profiles.

Clarification of Paper Mill Process Water (Industry)

The Pulp and Paper mills in North America are looking for new efficient technology to clean their process water for value-added recycling. Their ultimate goal is to reduce fresh water consumption mainly from the local rivers and also to reduce the toxicity load to the surface water. Currently, Dissolved Air Flotation (DAF) technology is available for reduction of suspended solids up to and above 99%; however, it alone does not reduce the dissolved organic, anionic trash and color contents. A combination of novel physico-chemical treatment along with existing DAF technology is needed to effectively treat white water to help improve the water recycling efficiency and hence, the overall mill efficiency.

PUBLISHED IN REFERRED JOURNALS

2015

Ding, W.D., Kuboki, T., Wong, A., Park, C.B., Sain, M., "Rheology, Thermal Property and Foaming Behavior of High D-content Polylactic Acid/Cellulose-Nanofiber Composites", RSC Advances (Accepted) 2015. [No. 315]

Rambabu, N., Panthapulakkal, S., Sain, M., Dalai, A.K., "Production of nanocellulose fibers from pinecone biomass: Evaluation and optimization of chemical and mechanical treatment conditions on mechanical properties of nanocellulose films" DOI:10.1016/j.indcrop.2015.11.083 [No. 314]

Rajkumar, S., Tjong, J., Nayak, S. K., and Sain, M., "Permeability and mechanical property correlation of bio based epoxy reinforced with unidirectional sisal fiber mat through vacuum infusion molding technique", Polymer Composites, DOI: 10.1002/pc.23797. [No. 313]

Ding, W.D., Jahani, D., Chang, E., L.H., Alemdar, A., Park, C.B., and Sain, M., 2015. "Development of PLA/Cellulosic Fibre Composite Foams Using Injection Molding: Crystallization and Foaming Behaviors", Composite Part A: Applied Science and Manufacturing, DOI: 10.1016/j.compositesa.2015.10.003 [No. 312]

Khazabi, M., Sain, M., "Morphological and Thermo-Mechanical Characterization of Open-Cell Spray Polyurethane Foamed Wall Insulation Modified With Cellulose Fiber", CSCanada, Advances in Petroleum Exploration and Development, DOI: 10.3968/6319, 2015[No. 311]

Obaid, N., Kortschot, M., and Sain, M.,"Investigating the Mechanical Response of Soy-Based Polyurethane Foams with Glass Fibers under Compression at Various Rates", 281Cellular Polymers, Vol. 34, No. 6, 2015[310]

Birat, K.C., Faruk, O., Agnelli, J.A.M., Leao, A.L., Tjong, J., Sain, M. "Sisal-glass fiber hybrid biocomposite: Optimization of injection molding parameters using Taguchi method for reducing shrinkage" doi:10.1016/j.compositesa.2015.10.034 [No. 309]

Panda, R., Tjong, J., Nayak, S.K., Sain, M., "Structural Effect of Phenalkamine on Mechanical and Tribological Property of Epoxy System", Journal of Science, Technology and Environment, Vol-5, Issue-1 of Sciencesights, 2015. [No. 308]
Ding, W.D., Chu, R.K.M., Mark, L.H., Park, C.B., and Sain, M. "Non-isothermal Crystallization Behaviors of Poly(Lactic Acid)/Cellulose Nanofiber Composites with Presence of CO2", European Polymer Journal,2015. [No. 307]
Rajkumar, S., Tjong, J., Nayak, S. K., Sain, M., "Studies on permeability of sisal fiber mat during Thermoset resin filling in vacuum infusion Process", The Canadian journal of chemical engineering-93, 1364, 2015. [No. 306]
Rajkumar, S., Tjong, J., Nayak, S. K., Sain, M., "Wetting behavior of soy-based resin and unsaturated polyester surface-modified sisal fiber mat", Journal of Reinforced Plastics and Composites. Vol. 34(10) 807-818. [No. 305]
Birat, K.C, Panthapulakkal, S., Kronka, A., Agnelli, J.A.M., Tjong, J, and Sain, M.,"Hybrid biocomposites with Enhanced Thermal and Mechanical Properties for structural applications" J. Appl. Polym. Sci. DOI: 10.1002/app.42452, 2015[No. 304]
Panda, R., Tjong, J., Nayak, S.K., Sain, M., "Effect of Alkyl Phenol from Cashew Nutshell Liquid on Mechanical and Dry Sliding Wear Behavior of Epoxy Resin", Bioresourses. [No. 303]
de Jesus, J. P. F., Sain, M., Jeng, R., Negrao, A. L. Leao, de Andrade, M. C. N., and de Almeida Minhoni, M. T., "Potential Application of Ganoderma lucidum in Solid State Fermentation of Primary Sludge and Wheat Straw". Bioresources, 10(2): 3197-3209, 2015. [No. 302]
S. Phillips, P. Y. Kuo, C. Demaria, L. Lessard, M. Sain, and P. Huberta. "Effect of Common Chemical Treatments on the Process Kinetics and Mechanical Properties of Flax/Epoxy Composites Manufactured by Resin Infusion". Journal of Polymers and the Environment. DOI 10.1007/s10924-015-0709-8. 2015. [No. 301]
Ranganathan, N.; Oksman, K.; Nayak, S.K.; Sain, M. "Regenerated cellulose fibers as impact modifier in long jute fiber reinforced polypropylene composites: Effect on mechanical properties, morphology and fiber breakage". Journal of applied polymer science, 132, 3, 41301, 2015. [No. 300]
Hajiha, H., and Sain, M., "High toughness hybrid biocomposite process optimization" Journal of Composites Science and Technology, 111, 44-49, 2015.[No. 299]
Cherizol, R., Sain, M. and Tjong, J. "Modeling the Rheological Characteristics of Flexible High-Yield Pulp-Fibre- Reinforced Bio-Based Nylon 11 Bio-Composite". Journal of Encapsulation and Adsorption Sciences, 5, 1-10, 2015. [No. 298]
Cherizol, R., Sain, M. and Tjong, J. "Review of Non-Newtonian Mathematical Models for Rheological Characteristics of Viscoelastic Composites" Green and Sustainable Chemistry, 5, 6-14, 2015. [No. 297]
Cherizol, R., Sain, M. and Tjong, J. "Evaluation of the Influence of Fibre Aspect Ratio and Fibre Content on the Rheological Characteristic of High Yield Pulp Fibre Reinforced Polyamide 11 "HYP/PA11" Green Composite". Open Journal of Polymer Chemistry, 5, 1-8, 2015. [No. 296]
Ferhan, M., Yan, N., and Sain, M. "Bark depolymerization during submerged fermentation using monofloral honey, a natural mediator substitute, and integration between laccases vs. bark biopolymers, characterized by Py-GC-MS" RSC Advances, 5: 14937-14952, 2015[No. 295]
Negrao, D. R., Sain, M., Leao, A. L., Sameni, J., Jeng, R., de Jesus, J. P. F., and Monteiro, R. T. R. "Fragmentation of lignin from organosolv black liquor by white rot fungi" Bioresources, 10(1): 1553-1573, 2015 [No. 294]
Sameni, J., Krigstin, S., Sain, M., "Effect of Preparation Parameters on the Formation of Lignin Acetate

Microspheres" International Journal of Engineering and Innovative Technology, 4 (8),102-113, 2015. [No. 293]

Panthapulakkal, S., Kirk, D., and Sain, M. "Alkaline Extraction of Xylan from Wood Using Microwave and Conventional Heating" Journal of Applied Polymer Science, DOI: 10.1002/APP.41330, 2015 [No. 292]

2014

Pervaiz, M., and Sain, M., "Recycling of Paper Mill Biosolids; A review on current practices and emerging biorefinery initiatives", J. Clean – Soil, Air, Water. doi: 10.1002/clen 201400590, 2014. [No. 291]Cheng, S., Panthapulakkal, S., Ramezani, N., Asiri, A. M., and Sain, M. "Aloe Vera Rind Nanofibers: Effect of Isolation Process on the Tensile Properties of Nanofibre Films" Bioresources, 9(4): 7653-7665, 2014 [No. 290]

Pervaiz, M., Oakley, P., and Sain, M. "Development of Novel Wax-enabled Thermoplastic Starch Blends and Their Morphological, Thermal and Environmental Properties" International Journal of Composite Materials, 2014, DOI: 10.5923/j.cmaterials.20140405.02 [No. 289]

Pervaiz, M., Oakley, P., and Sain, M. "Extrusion of Thermoplastic Starch: Effect of 'Green' and Common Polyethylene on the Hydrophobicity Characteristics" Materials Sciences and Applications, 2014, DOI: 10.4236/msa.2014.512085 [No. 288]

Awal, A., Rana, M., and Sain, M. "Thermomorheological and Mechanical Properties of Cellulose Reinforced PLA Biocomposites" Mechanics of Materials, 2014, DOI: 10.1016/j.mechmat.2014.09.009 [No. 287]

Kakroodi, A. R, Cheng, S., Sain, M., and Asiri, A. "Mechanical, Thermal, and Morphological Properties of Nanocomposites Based on Polyvinyl Alcohol and Cellulose Nanofiber from Aloe vera Rind" Journal of Nanomaterials, 2014, http://dx.doi.org/10.1155/2014/903498 [No. 286]

Gu, R. and Sain, M. "Typical interactions of composite additives with polyethylene and nanoclay" SPE Plastics Research Online, 06/2014, DOI: 10.13140/2.1.3788.8643 [No. 285]

Kuo, P.Y., Yan, N., and Sain, M. "Synthesis and Characterization of an Extractive-based Bio Epoxy Resin from Beetle Infested Pinus contorta Bark" Green Chemistry, 2014, DOI: 10.1039/C4GC00459K [No. 284]

Gu, R., Sain, M., Kokta, B.V., and Law, K.-N. "The Role of Nanoclay Formations and Wood Fiber Levels on Central Composite Designed Polyethylene Composites" Journal of composite materials, 2014, DOI: 10.1177/0021998314531034 [No. 283]

Gu, R., Sain, M., and Kokta, B.V. "Evaluation of Wood Composite Additives in the Mechanical Property Changes of PE Blends" Polymer Composites, 2014, DOI: 10.1002/pc.22942 [No. 282]

Cheng. S., Panthapulakkal, S., Sain, M., and Asiri, A. "Aloe Vera Rind Cellulose Nanofibers-reinforced Films" of Applied Polymer Science, Sci. 2014, DOI: 10.1002/APP.40592 [No. 281]

Khazabi, M. and Sain, M. "Morphological and physico-thermal properties of soy-based open-cell spray polyurethane foam insulation modified with wood pulp fiber" Journal of Advances in Petroleum Exploration and Development, 7(1): 1-6, 2014 [No. 280]

Gu, R., Sain, M., and Konar, S. "Development and Characterization of Flexible Epoxy Foam with Reactive Liquid Rubber and Starch" Journal of Materials Science, 49(8): 3125-3134, 2014 [No. 279]

Ummartyotin, S. and Sain, M. "Preparation of a cellulose and water-based resin composite" Materials Letters, 123: 70-74, 2014 [No. 278]

Onuaguluchi, O., Panesar, D.K., and Sain, M. "Properties of Nanofibre Reinforced Cement Composites"Construction and Building Materials, 63: 119-124, 2014 [No. 277]

Ferhan, M., Tanguy, N., Yan, N., and Sain, M. "Comparison of Enzymatic, Alkaline, and UV/H2O2 Treatments for Extraction of Beetle-infested Lodgepole Pine (BILP) and Aspen Bark Polyphenolic Extractives" ACS Sustainable Chemistry and Engineering, 2(2): 165-172, 2014 [No. 276]

O-Rak, K., Phakdeepataraphan, E., Bunnak, N., Ummartyotin, S., Sain, M., and Manuspiya, H. "Development of bacterial cellulose and poly (vinylidene fluoride) binary blend system: Structure and properties" Chemical Engineering Journal, 237: 396-402, 2014 [No. 275]

Sameni, J., Krigstin, S., Rosa, D.S., Leao, A., and Sain, M. "Thermal Characteristics of Lignin Residue from Industrial Processes" BioResources 9(1): 725-737, 2014 [No. 274]

Hajiha, H., Sain, M., and Mei, L.H. "Modification and Characterization of Hemp and Sisal Fibers" Journal of Natural Fibers,11(2): 144-168, 2014 [No. 273]

Faruk, O., Bledzki, A.K., Fink, H.-P., and Sain, M. "Progress Report on Natural Fiber Reinforced Composites"Macromolecular Materials and Engineering, 299(1): 9-26, 2014 [No. 272]

Hou, C., Czubernat, K., Jin, S. Y., Altenhof, W., Maeva, E., Seviaryna, I., Bandyopadhyay-Ghosh, S., Sain, M., and Gu, R. "Mechanical response of hard bio-based PU foams under cyclic quasi-static compressive loading conditions" International Journal of Fatigue, 59: 76-89, 2014 [No. 271]

O-Rak, K., Ummartyotin, S., Sain, M., and Manuspiya, H. "Covalently grafted carbon nanotube on bacterial cellulose composite for flexible touch screen application" Materials Letters, 107: 247-250, 2014 [No. 270]

2013

Ghos, S.B., Bandyopadhyay-Ghosh, S., and Sain, M.M. "Development of novel polysaccharide derived hybrid biocomposite foam and evaluation of biopolymer cytotoxicity-a sustainable approach" Journal of Composite Materials, November, 2013, DOI: 10.1177/0021998313509423 [No. 269]

Faruk, M., Sain, M., and Farnood, R. "Development of Lignin and Nanocellulose Enhanced Bio PU Foams for Automotive Parts" Journal of Polymers and the Environment, DOI: 10.1007/s10924-013-0631-x, 2013 [No. 268]

Ferhan, M., Yan, N., and Sain, M. "A New Method for Demethylation of Lignin from Woody Biomass Using Biophysical Methods" J Chem Eng Process Technol., 4: 160, DOI: 10.4172/2157-7048.1000160, 2013 [No. 267]

Panthapulakkal, S. and Sain, M. "Isolation of Nano Fibres from Hemp and Flax and Their Thermoplastic Composites" Journal of Plastic and Polymer Technology, 2(1): 9-16, 2013 [No. 266]

Panthapulakkal, S. and Sain, M. "Optimization of Microwave Assisted Alkaline Extraction of Xylan from Birch Wood Using Response Surface Methodology" Journal of Materials Science and Chemical Engineering, 1(6): 38-50, 2013 [No. 265]

Kuo, P. Y., Yan, N., and Sain, M. "Influence of Cellulose Nanofibers on the Curing Behavior of Epoxy/Amine Systems"European Polymer Journal, 49(12): 3778-3783, 2013 [No. 264]

Gu, R., Sain, M. M., and Kokta, B. V. "Morphological Changes and Surface Reactions of Wood Fibers in Wood Composites"Journal of Thermoplastic Composite Materials, 28(9): 1260-1277, 2013 [No. 263]

Faruk, O. and Sain, M. "Continuous Extrusion Foaming of Lignin Enhanced Thermoplastic Polyurethane (TPU)"Journal of Biobased Materials & Bioenergy, 7: 309-314, 2013 [No. 262]

Cherian, B. M., Leao, A., Chaves, M., Ferreira de Souza, S., Sain, M., and Narine, S.S. "Environmental ageing studies of chemically modified micro and nanofibril phenol formaldehyde composites" Industrial Crops and Products, 49: 471-483, 2013 [No. 261]

Konar, S. K., Gu, R., and Sain, M. "Preparation and Characterization of Baked Nitrile Latex Foam Reinforced with Biomasses" Industrial Corps and Products, 42: 261-267, 2013 [No. 260]

Gu, R., Konar, S. K., and Sain, M. "A Feasibility Study of Polyurethane Composite Foam with Added Hardwood Pulp"Industrial Corps and Products, 42: 273-279, 2013 [No. 259]

Awal, A. and Sain, M. "Characterization of Soda Hardwood Lignin and the Formation of Lignin Fibers by Melt Spinning"Journal of Applies Polymer Science, 129(5): 2765-2771, 2013 [No. 258]

Panthapulakkal, S., and Sain, M. "Investigation of Structural Changes of Alkaline-extracted Wood Using X-ray Microtomography and X-ray Diffraction: A Comparison of Microwave versus Conventional Method of Extraction" Journal of Wood Chemistry and Technology, 33(2): 92-102, 2013 [No. 257]

Gu, R., and Sain, M. "Effects of Wood Fiber and Microclay on the Performance of Soy Based

Polyurethane Foams" Journal of Polymers and the Environment, 21(1): 30-38, 2013 [No. 256]
Ferhan, M., Santos, S. N., Melo, I.S., Yan, N., and Sain, M. "Identification of a Potential Fungal Species by 18S rDNA for Ligninases Production" J. Appl. Microbiol. Biotechnol., 29 (12): 2437-2440, 2013 [No. 255]
Khoshraftar, S., Hung, S., Khan, S., Gong, Y., Tyagi, V., Parkinson, J., Sain, M., Moses, A. M., and Christendat, D. "Sequencing and Annotation of the Ophiostoma ulmi Genome" BMC Genomics, 14: 162, 2013 [No. 254]
Panthapulakkal, S., Pakharenko, V., and Sain, M. "Microwave Assisted Short-Time Alkaline Extraction of Birch Xylan"Journal of Polymers and the Environment, 21(4): 917-929, 2013 [No. 253]

2012

Awal, A., Sain, M., and Chowdhury, M. "Thermal analysis and spectroscopic studies of electrospun nano-scale composite fibers" Journal of Thermal Analysis and Calorimetry, 107(3): 1237-1242, 2012 [No. 252]
Awal, A. and Sain, M. "Cellulose–Polymer Based Green Composite Fibers by Electrospinning" Journal of Polymers and the Environment, 20(3): 690-697, 2012 [No. 251]
Panthapulakkal, S. and Sain, M. "Preparation and Characterization of Cellulose Nanofibril films from Wood Fibre and Their Thermoplastic Polycarbonate Composites" International Journal of Polymer Science, DOI: 10.1155/2012/381342, 2012 [No. 250]
Ferhan, M., Leao, A. L., de Melo, I. S., Yan, N., and Sain, M. "Ligninases Production and Partial Purification of Mnp from Brazilian Fungal Isolate in Submerged Fermentation" Ferment Technol., DOI: 10.4172/2167-7972.1000106, 1(106), 2012 [No. 249]
Vaskova, I., Jeng, R., Tyagi, V., Rodriguez, A., and Sain, M. "Extracellular proteins produced by different species of the Fungus Trichoderma on a secondary paper mill sludge Substrate" BioRes, 7(1): 1029-1039, 2012 [No. 248]
Ummartyotin, S., Bunnak, N., Juntaro, J., Sain, M., and Manuspiya, H. "Synthesis and luminescence properties of ZnS and metal (Mn, Cu)-doped-ZnS ceramic powder" Solid State Sciences, 14: 299-304, 2012 [No. 247]
Ummartyotin, S., Bunnak, N., Junataro, J., Sain, M., and Manuspiya, H. "Synthesis of colloidal silver nanoparticles for printed electronics" C. R. Chimie, 15: 539-544, 2012 [No. 246]
Ummartyotin, S., Juntaro, J., Sain, M., and Manuspiya, H. "The role of ferrofluid on surface smoothness of bacterial cellulose nanocomposite flexible display" Chemical Engineering Journal, 193-194: 16-20, 2012 [No. 245]
Ummartyotin, S., Bunnak, N., Juntaro, J., Sain, M., and Manuspiya, H. "Hybrid organic-inorganic of ZnS embedded PVP nanocomposite film for photoluminescent application" C. R. Physique, 13: 994-1000, 2012 [No. 244]
Zhu, M., Bandyopadhayay-Ghosh, S., Khazabi, M., Cai, H., Correa, C., and Sain, M. "Reinforcement of soy polyol-based rigid polyurethane foams by cellulose microfibers and nanoclays" Journal of Applied Polymer Science,124(6): 4702-4710, 2012 [No. 243]
Faruk, O., Bledzki, A., Fink, H., Sain, M. "Biocomposites Reinforced with Natural Fibers: 2000–2010" Progress in Polymer Science, 37(11): 1552-1596, 2012 [No. 242]
Gu, R., Konar, S., and Sain, M. "Preparation and Characterization of Sustainable Polyurethane Foams from Soybean Oils"Journal of the American Oil Chemist's Society, 89: 2103-2111, 2012 [No. 241]
Edalatmanesh, M., Sain, M., and Liss, S. "Enzymatic Modification of Secondary Sludge by Lipase and Laccase to Improve the Nylon/sludge Composite Properties" Journal of Reinforced Plastics and Composites, 31(3): 179-188, 2012 [No. 240]
Leao, A.L., Cherian, B. M., Ferreira de Souza, S., Sain, M., Narine, S., Caldeira, M.S., and Toledo, M.A.S. "Use of Primary Sludge from Pulp and Paper Mills for Nanocomposites" Mol. Cryst. Liq. Cryst., 556: 254–

263, 2012 [No. 239]
Ummartyotin, S., Juntaro, J., Sain, M., and Manuspiya, H. "Development of transparent bacterial cellulose nanocomposite film as substrate for flexible organic light emitting diode (OLED) display" Industrial Crops and Products, 35: 92-97, 2012 [No. 238]
Juntaro, J., Ummartyotin, S., Sain, M., and Manuspiya, H. "Bacterial cellulose reinforced polyurethane-based resin nanocomposite: A Study of how ethanol and processing pressure affect physical, mechanical and dielectric properties"Carbohydrate Polymers, 87: 2464-2469, 2012 [No. 237]
Baltazar, A., and Sain, M. "Effect of Bismaleimide Reactive Extrusion on the Crystallinity and Mechanical Performance of Poly (lactic acid) Green Composites" Journal of Applied Polymer Science, 124 (4): 3013-3023, 2012 [No. 236]

2011

Janardhnan S., and Mohini, S., "Isolation of Cellulose Nanofibers: Effect of Biotreatment on Hydrogen Bonding Network in Wood Fibers" International Journal of Polymer Science, DOI: 10.1155/2011/279610, 2011 [No. 235]
Ummartyotin, S., Juntaro, J., Wu, C., Sain, M., and Manuspiya, H. "Deposition of PEDOT: PSS Nanoparticles as a Conductive Microlayer Anode in OLEDs Device by Desktop Inkjet Printer" Journal of Nanomaterials, DOI: 10.1155/2011/606714, 2011 [No. 234]
Baltazar, A., Seviaryna, I., Sain, M., and Yu Maeva, E. "Acoustic, tomographic and morphological properties of bismaleimide-modified PLA green composites" Journal of Reinforced Plastics and Composites, 30 (16): 1329-1340, 2011 [No. 233]
Khazabi, M., Gu, R., and Sain, M. "Fiber Reinforced Soy-Based Polyurethane Spray Foam Insulation. Part 1: Cell Morphologies" BioResources, 6(4): 3757-3774, 2011 [No. 232]
Gu, R., Khazabi, M., and Sain, M. "Fiber Reinforced Soy-based Polyurethane Spray Foam Insulation. Part 2: Thermal and Mechanical Properties" BioResources, 6(4): 3775-3790, 2011 [No. 231]
Edalatmanesh, M., Sain, M., and Liss, S.N. "Utilization of Secondary Sludge as Filler in Composites: Surface Energy and Final Mechanical Properties" Journal of Reinforced Plastics and Composites, 30(10): 864-874, 2011 [No. 230]
Ge, X.G., George, S., Law, S., and Sain, M. "Mechanical Properties and Morphology of Polylactide Composites with Acrylic Impact Modifier" Journal of Macromolecular Science, Part B: Physics, 50(11): 2070-2083, 2011 [No. 229]
Ummartyotin, S., Juntaro, J., Sain, M., and Manuspiya, H. "Si-O barrier technology for bacterial cellulose nanocomposite flexible displays" Carbohydrate Polymers, 86: 337-342, 2011 [No. 228]
Kim, S. G., Leung, S. N., Park, C. B., and Sain, M. "The Effect of Dispersed Elastomer Particle Size on Heterogeneous Nucleation of TPO with N2 Foaming" Chemical Engineering Science, 66(16): 3675-3686, 2011 [No. 227]
Janardhnan, S., and Sain, M., "Bio-Treatment of Natural Fibers in Isolation of Cellulose Nanofibres: Impact of Pre-Refining of Fibers on Bio-Treatment Efficiency and Nanofiber Yield" Journal of Polymers and the Environment, 19: 615-621, 2011 [No. 226]
Sundar, S., Sain, M., and Oksman, K. "Thermal Characterization and Electrical Properties of Fe-modified Cellulose Long Fibers and Micro Crystalline Cellulose" Journal of Thermal Analysis and Calorimetry, 104 (3): 841-847, 2011 [No. 225]
Awal, A. and Sain, M. "Spectroscopic Studies and Evaluation of Thermorheological Properties of Softwood and Hardwood Lignin" Journal of Applied Polymer Science, 122(2): 956–963, 2011 [No. 224]
Sain, M. "Overview of Biofoams for Lightweight Auto Parts" Chemicke Listy, 105(15): SPEC. ISSUE, 239-

240, 2011 [No. 223]

Janardhnan, S. and Sain, M., "Targeted Disruption of Hydroxyl Chemistry and Crystallinity in Natural Fibers for the Isolation of Cellulose Nano-fibers via Enzymatic Treatment" BioResources, 6(2): 1242-1250, 2011 [No. 222]

Awal, A., Sain, M., and Chowdhury, M. "Preparation of Cellulose-Based Nano-Composite Fibers by Electrospinning and Understanding the Effect of Processing Parameters" Composite Part B, 42(5): 1220-1225, 2011 [No. 221]

Lee, Y.H., Kuboki, T., Park, C. B., and Sain, M. "The Effects of Nanoclay on the Extrusion Foaming of Wood Fiber/Polyethylene Nanocomposites" Polymer Engineering and Science, 51(5): 1014-1022, 2011 [No. 220]

Pervaiz, M. and Sain, M. "Protein Extraction from Secondary Sludge of Paper Mill Wastewater and its Utilization as a Wood Adhesive" BioResources, 6(2): 961-970, 2011 [No. 219]

2010

Pervaiz, M. and Sain, M. "Extraction and Characterization of Extracellular Polymeric Substances (EPS) from waste sludge of pulp and paper mill" International Review of Chemical Engineering, 2(4): 550-554, 2010 [No. 218]

Banik, I. and Sain, M. M. "Nanoclay Modified Water-Blown Polyurethane Foams Derived from bifunctional Soybean Oil-Based Polyol" Polymer-Plastics Technology and Engineering, 49(7): 701-706, 2010 [No. 217]

Kim, S. G., Lee, J. W. S., Park, C. B., and Sain, M. "Enhancing Cell Nucleation of Thermoplastic Polyolefin Foam Blown with Nitrogen" Journal of Applied Polymer Science, 118: 1691-1703, 2010 [No. 216]

Guo, Q., Cheng, B., Kortschot, M., Sain, M., Knudson, R., Deng, J., and Alemdar, A. "Performance of Long Canadian Natural Fibers as Reinforcements in Polymers" Journal of Reinforced Plastics and Composites, 29(21): 3197–3207, 2010 [No. 215]

Bandyopadhyay-Ghosh, S., Jeng, R., Mukherjee, J., and Sain, M. "In vitro cytotoxicity of amylose-based bioplastic for packaging applications" Journal of Polymers and the Environment, 18(3): 231-234, 2010 [No. 214]

Edalatmanesh, M., Sain, M., and Liss, S. "Usage of Pulp and Paper Secondary Sludge for Biocomposite Production: FTIR and DSC Analysis" International Review of Chemical Engineering, 2(1): 25-30, 2010 [No. 213]

Edalatmanesh, M., Sain, M., and Liss, S. "Cellular Biopolymers and Molecular Structure of a Secondary Pulp and Paper Mill Sludge Verified by Spectroscopy and Chemical extraction Techniques" Water Science and Technology, 62(12): 2846-53, 2010 [No. 212]

Lee, H. Y., Kuboki, T., Park, C.B., Sain, M., and Kontopoulou, M. "The Effects of Clay Dispersion on the Mechanical, Physical, and Flame-Retarding Properties of Wood Fiber/Polyethylene/Clay Nanocomposites"Journal of Applied Polymer Science, 118: 452-461, 2010 [No. 211]

Bandyopadhyay-Ghosh, S., Ghosh, S. B., and Sain, M. "Synthesis of soy-polyol by two step continuous route and development of soy-based polyurethane foam" Journal of Polymers and the Environment, 18:437-442, 2010 [No. 210]

Rodriguez, A., Ghosh, S. B., Jeng, R., and Sain, M. "Dynamic mechanical behavior and thermal characterization of biofilms based on starch modified by fungi isolates" Journal of Polymers and the Environment, 18(3): 430-436, 2010 [No. 209]

Souza, S.F., Leao, A.L., Cai, J.H., Wu, C., Sain, M., and Cherian, B. M. "Nanocellulose from curava fibers and their nanocomposites" Molecular Crystals and Liquid Crystals, 522(1): 42–52, 2010 [No. 208]

Sundar, S., Sain, M., and Oaksman, K. "Characterization of Microcrystalline Cellulose and Cellulose Long Fiber Modified by Iron Salt" Carbohydrate Polymers, 80(1): 35-43, 2010 [No. 207]

Huang, C., Jeng, R., Sain, M., Hubbes, M., and Dumas, M. T. "Rapid differentiation of Ophiostoma ulmi and Ophiostoma novo-ulmi isolates by matrix-assisted-laser-desorption/ionization time-of-flight/time-of-flight mass spectrometry" Forest Pathology, 40(1): 1-6, 2010 [No. 206]

Awal, A., Ghosh, S.B., and Sain, M. "Thermal properties and spectral characterization of wood pulp reinforced bio-composite fibers" Journal of Thermal Analysis and Calorimetry, 99(2): 695-701, 2010 [No. 205]

2009

Kuboki, T., Lee, Y.H., Park, C.B., and Sain, M. "Mechanical Properties and Foaming Behavior of Cellulose Fiber Reinforced High-Density Polyethylene Composites," Polymer Engineering and Science, 49(11): 2179-2188, 2009 [No. 204]

Sain, M.M. "Bio-refinery Development of chemical platforms across integrated biomass technologies" Polimeros,19(1): E9-E11, 2009 [No. 203]

Bandyopadhyay-Ghosh, S. and Sain, M. "Cellulose microfibres: recent advances and future prospects in medical applications" GAK Gummi Fasern Kunststoffe, 9: 564-568, 2009 [No. 202]

Xiong, Y., Jeng, R., Sain, M., Diebel, P., and Michelle, L. "Investigation on correlation between protein content and moisture absorption-desorption rate of protein coating" International Journal of plastic technology, 13(1): 1-7, 2009 [No. 201]

Banik, I. and Sain, M.M. "Water-Blown Soy Polyol Based Polyurethane Foams Modified by Cellulosic Materials Obtained from Different Sources" Journal of Applied Polymer Science, 112(4): 1974–1987, 2009 [No. 200]

Behzad, T. and Sain, M., "Surface and Interface Characterization of Untreated and SMA Imide-Treated Hemp Fiber/Acrylic Composites" Polymer Composites, 30(6): 681-690, 2009 [No. 199]

Oksman, K., Mathew, A.P., and Sain, M. "Novel Bionanocomposites: Processing, Properties and Potential Applications"Plastics, Rubber & Composites: Macromolecular Engineering, 38(9-10): 396-405, 2009 [No. 198]

Alemdar, A., Oksman, K., and Sain, M. "The Effect of Decreased Fiber Size in Wheat Straw/Polyvinyl Alcohol Composites"Journal of Biobased Materials and Bioenergy, 3(1): 75-80, 2009 [No. 197]

Mishra S. and Sain, M. "Commercialization of Wheat Straw as Reinforcing Filler for Commodity Thermoplastics"Journal of Natural Fibers, 6(1): 83-97, 2009 [No. 196]

Rodriguez, A., Sain, M., and Jeng, R. "Thermal Characterization of Starch-Based Polymers Produced by Ophiostoma Spp"Journal of Thermal Analysis and Calorimetry, 98(1): 317-323, 2009 [No. 195]

Rodriguez, A., Sain, M., Jeng, R., and Baltazar-y-Jimenez, A. "Viscoelastic properties of polysaccharides derived from the fungal modification of native starch" International Reviews of Chemical Engineering – Rapid Communications (IRECHE), 1(5): 460-466, 2009 [No. 194]

Baltazar-y-Jimenez, A. and Sain, M. "Aspects of Lignocellulosic-fibre Reinforced Green Materials" Can Chem News, 61(6): 14-17, 2009 [No. 193]

Awal, A., Ghosh, S.B., and Sain, M. "Development and morphological characterization of wood pulp reinforced bio-composite fibers" Journal of Materials Science, 44(11): 2876-2881, 2009 [No. 192]

Xiong, Y., Jeng, R., and M. Sain. "Protein isolation from condensed distilled soluble of corn fermentation"International Journal of Polymers and Technologies, 2009 [No. 191]

2008

Alemdar, A., and Sain, M. "Isolation and Characterization of Nanofibers from Agricultural Residue – Wheat Straw and Soy Hulls"Bioresource Technology, 99(6): 1664-1671, 2008 [No. 190]

Alemdar, A., and Sain, M. "Biocomposites from Wheat Straw Nanofibers: Morphology, Thermal and Mechanical Properties"Composite Science and Technology, 68: 557-565, 2008 [No. 189]

Alemdar, A., Zhang, H., Sain, M., Cescutti, G., Müssig, J. "Determination of Fiber Size Distributions of

Injection Moulded Polypropylene/Natural Fibers Using X-ray Microtomography" Advanced Engineering Materials, 10(1-2): 126-130, 2008 [No. 188]

Sodhi, R., Sun, L., Sain, M., and Farnood, R. "Analysis of Ink/Coating Penetration on Paper Surfaces by Time-of-Flight Secondary Ion Mass Spectrometry (ToF-SIMS) in Conjunction with Principal Component Analysis (PCA)"The Journal of Adhesion, 84(3): 277-292, 2008 [No. 187]

Hubbe, M. A., Rojas, O.J., Lucia, L. A., and Sain, M. "Cellulosic Nanocomposites: A Review" BioResources, 3(3): 929-980, 2008 [No. 186]

Banik, I. and Sain, M. "Structure of Glycerol and Cellulose Fiber Modified Water Blown Soy Polyol Based Polyurethane Foams" J. Reinf. Plast. Comp., 27: 1745-1758, 2008 [No. 185]

Banik, I. and Sain, M. "Role of Refined Paper Fiber on Structure of Water Blown soy Polyol based Polyurethane Foams" J. Reinf. Plast. Comp., 27: 1515-1524, 2008 [No. 184]

Banik, I. and Sain, M. "Water Blown Soy Polyol Based Polyurethane Foams of Different Rigidities" J. Reinf. Plast. Comp., 27: 357-373, 2008 [No. 183]

Krigstin, S. and Sain, M. "Determination of the Mineral Constituents of Recycled Paper Mill Sludge" Tappi Journal, 7(6): 9-14, 2008 [No. 182]

Kim, S. G., Lee, K-M., Park, C. B., and Sain, M. "Foamability of Thermoplastic Vulcanizates Blown with Various Physical Blowing Agent" J. of Cellular Plastics, 44: 53-67, 2008 [No. 181]

2007

Balatinecz, J. and Sain, M. "Cars made of wood and hemp fibres? Why not?" Forestry Chronicle, 83(4): 482-484, 2007 [No. 180]

Krigstin, S. and Sain, M. "Fractionation of Dry Recycled Papermill Sludge to Higher Value Components" Journal of Biobased Materials and Bioenergy, 1(3): 315-322, 2007 [No. 179]

Chakraborty, A., Sain, M., Kortschot, M., and Ghosh, S.B. "Modeling energy consumption for the generation of microfibres from bleached kraft pulp fibres in a PFI mill"BioResources, 2 (2): 210-222, 2007 [No. 178]

Chakraborty, A., Sain, M., and Kortschot, M. "Dispersion of Wood Microfibers in a Matrix of Thermoplastic Starch and Starch-Polylactic Acid Blend" Journal of Biobased Materials and Bioenergy, 1(1): 71-77, 2007 [No. 177]

Ghosh, A. and Sain, M. "Effect of Propylene Carbonate on Physical Properties of Wood Fibreboard Composite"Polymers & Polymer Composites, 15 (4): 265-271, 2007 [No. 176]

Guo, G., Park, C. B., Lee, Y.H., and Sain, M. "Flame Retarding Effects of Nanoclay on Wood-Fiber Composites"Polymer Engineering and Science, 47 (3): 330-336, 2007 [No. 175]

Jeng, R., Huang, M., Sain, M., Hubbes, M., Rodriguez, A., and Saville, B. "Starch-Like Exopolysaccharide Produced by the Filamentous Fungi Ophiostoma Ulmi and O. novo-Ulmi" Forest Pathology, 37(2): 80-95, 2007 [No. 174]

Sain, M., Ghosh, A., and Banik, I. "Effect of Propylene Carbonate on the Properties of Composite Fiberboard from Wood Fiber Bonded with Renewable Wood Resin"Journal of Reinforced Plastics and Composites, 26: 705-713, 2007 [No. 173]

Mojumdar, S. C., Sain, M., and Prasad, R.C. "Selected Thermoanalytical Methods and Their Applications from Medicine to Construction" Journal of Thermal Analysis and Calorimetry, 90(3): 653-662, 2007 [No. 172]

Mishra, S. and Sain, M. "Strength Analysis of Chair Base from Wood Plastic Composites by Finite Element Method" Materials Research Innovations, 11(3): 137-143, 2007 [No. 171]

Panthapulakkal, S. and Sain, M. "Studies on the Water Absorption Properties of Short Hemp-Glass Fiber Hybrid Polypropylene Composites" Journal of Composite Materials, 41: 1871-1883, 2007 [No. 170]

Panthapulakkal, S. and Sain, M. "Agro-Residue Reinforced HDPE Composites: Fibre Characterization and Analysis of Composites Properties" Composites Part A: Applied Science and Manufacturing, 38(6): 1445-1454, 2007 [No. 169]

Lee, Y.H., Park, C.B., and Sain, M. "Effects of Clay Dispersion and Content on the Rheological, Mechanical Properties, and Flame Retardance of HDPE/Clay Nanocomposites" Journal of Applied Polymer Science, 105 (4): 1993-1999, 2007 [No. 168]

Kuboki, T., Lee, Y.H., Park, C.B., and Sain, M. "Effects of Styrene-Ethylene-Butylene Styrene Based Additives on the Mechanical Properties of Rice Hull/Polypropylene Composites" Polymer Engineering and Science, 47(7): 1148-1155, 2007 [No. 167]

Behzad, T., and Sain, M. "Measurement and prediction of Thermal Conductivity for Hemp fiber reinforced composites" Polymer Engineering and Science, 47(7): 977-983, 2007 [No. 166]

Behzad, T., and Sain, M. "Finite Element Modeling of Polymer Curing in Natural Fiber Reinforced Composites"Composite Science and Technology, 67(7-8): 1666-1673, 2007 [No. 165]

Wang, B. and Sain, M. "Dispersion of Soybean Stock-Based Nanofiber in a Plastic Matrix" Polymer International, 56 (4): 538-546, 2007 [No. 164]

Wang, B., and Sain, M., and Oksman, K. "Study of Structural Morphology of Hemp Fiber from the Micro to the Nanoscale" Applied Composite Materials, 14 (2): 89-103, 2007 [No. 163]

Wang, B. and Sain, M. "Isolation of Nanofibers from Soybean Source and Their Reinforcing Capability on Synthetic Polymers" Composites Science and Technology, 67 (11-12): 2521-2527, 2007 [No. 162]

Sreekumar, J., Sain, M., Farnood, R., Dougherty, W. "Influence of Styrene Maleic Anhydride Imide on Ink-Jet Print Quality and Coating Structure" Nordic Pulp and Paper Research Journal, 22(3): 307-313, 2007 [No. 161]

Wang, B. and Sain, M. "The Effect of Chemically Coated Nanofiber Reinforcement on Biopolymer Based Nanocomposites" BioResources, 2(3): 371-388, 2007 [No. 160]

Zhang, S.Y., Zhang, Y., Bousmina, M., Sain, M., and Choi, P. "Effects of Raw fiber Materials, Fiber Content, and Coupling Agent Content on Selected Properties of Polyethylene/Wood Fiber Composites" Polymer Engineering and Science, 47(10): 1678-1687, 2007 [No. 159]

Mishra,.S., Sain,M. "Strength analysis of chair base from wood plastic composites by finite element method" Materials Research Innovations,vol.11,no.3,pp.47-49,Sept. 2007[No.168]

Mishra, S; Sain, M; Strength analysis of chair base from wood plastic composites by finite element method; MATERIALS RESEARCH INNOVATIONS, vol.11, no.3, pp.137-143, 2007 [No.167] Muhammad Pervaiz, Mohini Sain, Arun Ghosh, "Evaluation of the influence of fibre length and concentration on mechanical performance of hemp fibre reinforced polypropylene composite", Journal of Natural Fibers, Vol. 2, No. 4, pp. 67-84 (2006) [No.166]

Thermoplastic Starch: Mohini Sain, Robert Jeng, Bradley Saville, Chumbei Dei and Martin Hubbes. Bioscience World, Vol. 9 (4) March 2006. [No.165]

S. G. Kim, C. B. Park and M. Sain, "Foamability of Thermoplastic Vulcanizates (TPVs) with Nitrogen and Carbon Dioxide", Cellular Polym. 25(1), pp. 19-33 (2006) [No.164]

S. Panthapulakkal, M. Sain and S. Law, (2006) Enhancement of Impact Strength of Natural Fibre and Hybrid Composites for Automotive Applications, Composites in Manufacturing, Vol.22, No.4, 1-7. [No.163]

Chakraborty A., Sain M. and Kortschot M. 2006. "Reinforcing potential of wood pulp derived microfibres in PVA matrix", Holzforschung 60 (1): 53-58. 2006. [No.162]

Wang, B. and Sain, M. Dispersion of Soybean Stock-based Nanofiber in a Plastic Matrix. Polymer International, 56:000-000(2007). DOI: 10.1002/pi.2167-available on line since Dec 8, 2006. [No.161]

M. M. Sain, A. Ghosh and I. Banik, 'Fiber board compostes from wood-fiber bonded with renewable wood resin' J. Reinf. Plast. Comp., 25, 1701-1708, 2006. [No.160]

Chun Bei Huang, Robert Jeng, Mohini Sain, Bradley A. Saville and Martin Hubbes; Production, Characterization, And Mechanical Properties Of Starch Modified By Ophiostoma Spp.; Bioresources, Vol 1, No 2 (2006), Pps. 257-269. [No.159]

2006

Chakraborty, A. and Sain, M. "Characterization of Cellulosic Microfibrils for Permeability Studies through Microfibril Dispersed Biopolymer Films" Journal of Biomechanics, 39, DOI: 10.1016/S0021-

9290(06)84817-7, 2006 [No. 158]
Park, C.B., Kim, S.G., Kang, B.S., and Sain, M. "Foamability of Thermoplastic Vulcanizate (TPV) Blown with Nitrogen and Carbon Dioxide" Cellular Polymers, 25(1): 19-33, 2006 [No. 157]
Panthapulakkal, S. and Sain, M. "Injection-Molded Short Hemp Fiber/Glass Fiber Reinforced Polypropylene Hybrid Composites – Mechanical, Water Absorption and Thermal Properties" Journal of Applied Polymer Science,103 (4): 2432-2441, 2006 [No. 156]
Lee, Y.H., Wang, K.H., Park, C.B., and Sain, M. "Effects of Clay Dispersion on the Foam Morphology of LDPE/clay nanocomposites" Journal of Applied Polymer Science, 103(4): 2129-2134, 2006 [No. 155]
Sain, M., Ghosh, A., and Banik, I. "Fiberboard Composites from Wood Fiber Bonded with Renewable Wood Resin" Journal of Reinforced Plastics and Composites, 25(16): 1701-1708, 2006 [No. 154]
Ghosh, A. and Sain, M. "Composite from Wood Fiber Bonded with Renewable Wood Resin" Polymers and Polymer Composites, 14(3): 217-227, 2006 [No. 153]
Mathew, A. P., Oksman, K., and Sain, M. "The Effect of Morphology and Chemical Characteristics of Cellulose Reinforcements on the Crystallinity of Polyactic Acid" Journal of Applied Polymer Science, 101(1): 300-310, 2006 [No. 152]
Gulati, D. and Sain, M. "Surface Characteristics of Untreated and Modified Hemp Fibers" Journal of Polymer Engineering and Science, 46 (3): 269-273, 2006 [No. 151]
Gulati, D. and Sain, M. "Fungal-Modification of Natural Fibers: A Novel Method of Treating Natural Fibers for Composite Reinforcement" Journal of Polymers and the Environment, 14 (4): 347-352, 2006 [No. 150]
Rouison D., Courturier, M., Panthapulakkal, S., and Sain M., "Measurement of the Average Permeability of Natural Fibre Mats in Resin Transfer Molding Application" Polymer and Polymer Composites, 14(3): 229-238, 2006 [No. 149]
Huang, C.B., Jeng, R., Sain, M., Saville, B.A., and Hubbes, M. "Production, Characterization, and Mechanical Properties of Starch Modified by Ophiostoma spp." BioRescouces, 1(2): 257-269, 2006 [No. 148]
Janardhnan, S., and Sain Mohini "Isolation of Cellulose Microfibrils – An Enzymatic Approach"BioResources, 1 (1): 1-5, 2006 [No. 147]
Chakraborty, A., Sain, M., and Kortschot, M. "Reinforcing Potential of Wood Pulp derived Microfibres in a PVA Matrix"Holzforschung, 60(1): 53-58, 2006 [No. 146]
Panthapulakkal, S. and Sain, M. "Bioprocess Preparation of Wheat Straw Fibres and Their Characterization"Industrial Crops and Products, 23(1):1-8, 2006 [No. 145]
Panthapulakkal, S. and Sain, M. "Injection Molded Wheat Straw and Corn Stem Filled Polypropylene Composites" Journal of Polymers and the Environment, 14(3): 265-272, 2006 [No. 144]
Muasher, M. and Sain, M. "The Efficacy of Photostabilizers on the Color Change of Wood Filled Plastic Composites"Polymer Degradation and Stability, 91(5): 1156-1165, 2006 [No. 143]
Dixit, N., Kortschot, M. T., Sain, M., and Gulati, D. "Effect of Interactions between Interface Modifiers and Viscosity Modifiers on the Performance and Processibility of the Rice Hulls-HDPE Composites" Journal of Reinforced Plastics and Composites, 25 (16): 1691-1699, 2006 [No. 142]
Dixit, N., Sain, M., Kortschot, M. T., and Gulati, D. "Influence of Viscosity-Interface Modifier Interactions on Performance and Processability of Rice Hulls PE Composites" International Polymer Processing, 21(5): 504-508, 2006 [No. 141]
Pervaiz, M. and Sain, M. "Biorefinery: Opportunities and Barriers for Petro-Chemical Industries" Pulp and Paper Canada, 107(6): 31-33, 2006 [No. 140]
Panthapulakkal, S., Zereshkian, A., and Sain, M. "Preparation and Characterization of Wheat Straw Fibres for Reinforcing Application in Injection Molded Thermoplastic Composites" Bioresource Technology, 97(2): 265-272, 2006 [No. 139]
Panthapulakkal, S., Sain, M., and Law, S. "Effect of Water Absorption, Freezing and Thawing, and Photo-aging on Flexural Properties of Extruded HDPE/Rice husk Composites" Journal of Applied Polymer Science, 100(5): 3619-3625, 2006 [No. 138]

Pramanick, A. and Sain, M. "Temperature-Stress Equivalency in Nonlinear Visco-Elastic Creep Characterization of Thermoplastic/Agro-Fiber Composites" J. Thermoplastic Composite Materials, 19(1): 35-60, 2006 [No. 137]

Pramanick, A. and Sain, M. "Nonlinear Visco-Elastic Creep Prediction of HDPE-Agrofiber Composites" Journal of Composite Materials, 40(5): 417-431, 2006 [No. 136]

Krigstin, S. and Sain, M. "Characterization and Potential Utilization of Recycled Paper Mill Sludge" Pulp and Paper Canada, 107(5): 29-32, 2006 [No. 135]

Pervaiz, M., Sain, M., and Ghosh, A. "Evaluation of the Influence of Fibre Length and Concentration on Mechanical Performance of Hemp Fibre Reinforced Polypropylene Composite" Journal of Natural Fibers, 2(4): 67-84, 2006 [No. 134]

Lopez, J. L., Cooper, P., and Sain, M. "Performance of Natural Fibre Plastic Composites under Stress for Outdoor Applications: Effect of Moisture, Temperature and Ultraviolet (UV) Light Exposure" Journal of Applied Polymer Science, 99(5): 2570-2577, 2006 [No. 133]

Rouison, D., Sain, M., and Couturier, M. "Resin Transfer Molding of Hemp Fiber Composites: Optimization of the Process and Mechanical Properties of the Materials" Composite Science and Technology, 66(7-8): 895-906, 2006 [No. 132]

Wang, W., Sain, M., and Cooper, P. A. "Study of Moisture Absorption in Natural Fiber Plastic Composites"Composite Science Technology, 66(3-4): 379-386, 2006 [No. 131]

131 publications in referred journals from 1983 - 2005

PUBLICATIONS IN *PRESS*

Ummartyotin S., Juntaro J., Sain M., Manuspiya H., "Synthesis of colloidal silver nanoparticle for printed electronic", submitted to Comptes Rendus Chimie. (In press, 2011)

Ummartyotin S., Juntaro J., Sain M., Manuspiya H. "Hybrid organic-inorganic of ZnS embedded PVP nanocomposite film for photoluminescent application, Submitted to Comptes Rendus Chimie, (In press, 2011)

Ummartyotin S., Juntaro J., Sain M., Manuspiya H. "Significant enhancement of surface smoothness of bacterial cellulose nanocomposite flexible display by ferrofluid", Submitted to Chemical Engineering Journal. ((In press, 2011)

PUBLICATIONS SUBMITTED

Kim, S. G., Leung, S. N., Park C. B., and Sain, M., "Size Effect of Dispersed Elastomer Particles of TPO Blends in Heterogeneous Bubble Nucleation", Ind. Chem. Eng. Res., July (2007) (submitted)

Kim, S. G., Lee, K.-M., Park, C. B., and Sain, M., "Water Foaming of Thermoplastic Vulcanizate (TPV) with Hydrophilic SiO2", J. Cell. Plast. (in preparation)

Kim, S. G. Park, C. B., and Sain, M., "In-Situ Bubble Nucleation Study of Thermoplastic Polyolefin (TPO) Blends", J. Appl. Polym. (submitted)

Chakraborty, A., Sain, M. and Kortschot, M., "Modelling energy consumption in genering microfibres from bleached softwood kraft pulp using PFI mill for application in composites", submitted to *Nordic Pulp and Paper Research Journal* on July 21, 2006

Banik, I., and Sain, M., 'Influence of Some Variables on the Relative Fiexibility of Soy Polyol Based Polyurethane Foams' Industrial Crops and Products, communicated, 2006

ARTICLES UNDER REVIEW

Alemdar, A., Sain, M., (2006). Isolation and Characterization of Nanofibers from Agricultural Residues-Wheat Straw and Soy Hulls. Bioresource Technology (under revision)

Panthapulakkal, S., and Sain, M., Agro-residue Reinforced High Density Polyetheylene Compoties: Fibre Characterization and Analysis of Composites properties Biomass and Bioenergy

Ghosh, A., and Sain, M., "Effect of propylene carbonate on physical properties of composite fiberboard from wood fiber bonded with renewable wood resin and urea formaldehyde resin", Journal of Applied Polymer Science (Communicated).

Additional 12 articles are under review.

Books

1. Wood Composite: Woodhouse Press, London; Ed: Oksman and Sain, 2007 (in press)
2. Cellulose Nanocomposite; Oxford Press; Ed: Oksman and Sain; 2006
3. Handbook of Green Materials: Processing Technologies, Properties and Applications (in 4 Volumes) World Scientific Publishing Company, 2014, ISBN: 978-981-4566-45-2
4. Biofiber Reinforcements in Composite Materials, Eds. Faruk, O. and Sain, M., Woodhead Publishing Ltd., 2014, ISBN: 9781782421221
5. Lignin in Polymer composites, Eds. Faruk, O and Sain, M., Elsevier Science Publishing co. inc. 2015, ISBN-13; 9780323355650

BOOK CHAPTERS

Suhara Panthapulakkal and Mohini Sain, (2015) The Use of Wheat Straw Fibres in Composites In: Biofibre reinforcements in composite materials Omar F., Sain, M. Eds. Woodhead Engineering Publishers; pp:423-450 [No. 30]

KC, B. Pervaiz, M. Faruk, O. Tjong, J. Sain, M. "Green composite manufacturing via compression molding and thermoforming". In book: Manufacturing of Natural Fibre Reinforced Polymer Composites, Ed: 1st, Chapter: 3, Page 45 -63. Springer International Publishing, 2015. DOI 10.1007/978-3-319-07944-8_3 [No. 29]

Hajiha, H. and Sain, M. "The use of sugarcane bagasse fibres as reinforcements in composites", in: "Biofiber Reinforcements in Composites", Eds. Faruk, O. and Sain, M., Woodhead Publishing Ltd. [in press] 2014 [No. 28]

Panthapulakkal, S. and Sain, M. "The use of wheat straw fibres as reinforcements in composites", in: "Biofiber Reinforcements in Composites", Eds. Faruk, O. and Sain, M., Woodhead Publishing Ltd. [in press] 2014 [No. 27]

Bandyopadhyay-Ghosh, S., Ghosh, S.B., and Sain, M. "The use of biobased nanofibers in composites", in "Biofibre Reinforcement in Composite Materials", Eds. O. Faruk and M. Sain, Woodhead Publishing [in press] 2014 [No. 26]

Leão, A.L., Cherian, B.M., Narine, S., Souza, S.F., Sain, M., and Thomas, S. "The use of pineapple leaf fibers (PALFS) as reinforcements in composites", in: "Biofiber Reinforcements in Composites", Eds. Faruk, O. and Sain, M., Woodhead Publishing Ltd., 06/2014 [No. 25]

Souza, S.F., Ferreira, M., Sain, M., Ferreira, M.Z., Cherian, B. M., and Leão, A.L. "The use of curaua fibers as reinforcements in composites", in: "Biofiber Reinforcements in Composites", Eds. Faruk, O. and Sain, M., Woodhead Publishing Ltd., 06/2014 [No. 24]

Sain, M. and Oksman, K. "Introduction to Biobased Composite Materials: Their Processing, Properties, and Industrial Applications", in: Handbook of Green Materials: Processing Technologies, Properties and Applications, Vol. 4: Biobased Composite Materials, Their Processing Properties and Industrial Applications, Eds. Oksman, K., Mathew, A.P., Bismarck, A., Rojas, O., and Sain, M., World Scientific Publishing Company, 05/2014 [No. 23]

Gu, R. and Sain, M. "Biobased polyurethanes", in: "Handbook of Green Materials: Processing Technologies, Properties and Applications", Ed. Kristiina Oksman, 05/2014 [No. 22]

Ummartyotin, S., Sain, M., and Qvintus, P. "Cellulose in Printed Electronics", in: Handbook of Green Materials: Processing Technologies, Properties and Applications, Vol. 2: Bionanocomposites: Processing, Characterization and Properties, Eds. Oksman, K., Mathew, A.P., Bismarck, A., Rojas, O., and Sain, M., World Scientific Publishing Company, 05/2014 [No. 21]

Faruk, O. and Sain, M. "Compression Molding and Thermoforming of Green Composite

Material", in: "Handbook of Green Materials: Processing Technologies, Properties and Applications", Eds. Oksman, K., Mathew, A.P., Bismarck, A., Rojas, O., and Sain, M., World Scientific Publishing Company, 05/2014 [No. 20]
Souza, S.F., Cherian, B.M., Leão, A.L., Telascrea, M., Chaves, M.R.M., Narine, S.S., and Sain, M. "Potential Biomedical Applications of Renewable Nanocellulose", in: "Green Composites from Natural Resources", CRC Press, 11/2013 [No. 19]
Faruk, O. and Sain, M. "Biofiber Reinforced Polymer Composites for Structural Applications", in: "Developments in Fibre-Reinforced Polymer (FRP) Composites for Civil Engineering", Ed. Nasim Uddin, Woodhead Publishing Limited, United Kingdom, Pages 18-53, 2013 [No. 18]
Baltazar-y-Jimenez, A., Awal, A., and Sain, M. "Natural Composites: Fibre Modification" Wiley Encyclopedia of Composites, Ed. Luigi Nicolais, John Wiley & Sons, NJ, Online ISBN: 9781118097298, DOI: 10.1002/9781118097298.weoc159, 2012 [No. 17]
Baltazar-y-Jimenez, A. and Sain, M. "Natural Fibres for Automotive Applications", in: "Handbook of Natural Fibres Vol. 2. Processing and Applications", Ed. Ryszard M. Kozlowski, Woodhead Publishing Ltd., U.K., 2012 [No. 16]
Ghosh, B.S., Bandyopadhyay-Ghosh, S., and Sain, M. "Composites", in: "Polylactic acid: Synthesis, Structure, Properties, Processing and Applications", Eds. Rafael A. Auras, long-Tak Lim, Susan E.M. Selke, and Hideto Tsuji, Wiley-Blackwell, ISBN: 978-0-470-29366-9, 293-310, 2010 [No. 15]
Bandyopadhyay-Ghosh, S., Ghosh, S.B., and Sain, M. "Cellulose Nanocomposites", in "Industrial Applications of Natural Fibres: Structure, Properties and Technical Applications", Ed. Jörg Müssig, John Wiley & Sons, ISBN: 978-0-470-69508-1, 459-480, 2010 [No. 14]
Sain, M. and Pervaiz, M. "Mechanical properties of wood-polymer composites", in: "Wood-Polymer Composites", Eds. Oksman, C. and Sain, M., Woodhead Publishing Limited, 2008 [No. 13]
Mishra, S. and Sain, M. "Long term Performance of natural-fibre composites", in: "Properties and performance of natural fibre composites", (Ed. Kim Pickering), Woodhead Publishing Limited, ISBN 13: 978-1-84569-267-4, Cambridge, UK, 2008 [No. 12]
Sain, M. and Oksman, K. "Introduction to cellulose nanocomposites", in: Cellulose Nanocomposites: Processing, Characterization and Properties, Eds. Oksman, K. and Sain, M., ACS Symposium Series, Vol. 938, Chapter 1, pp 2–8, DOI: 10.1021/bk-2006-0938.ch001, 2006 [No. 11]
Mathew, A., Chakraborty A., Oksman, K., and Sain, M. "The structure and mechanical properties of cellulose nanocomposites prepared by twin screw extrusion", in: "Cellulose Composites: Processing, Characterization and Properties", Eds. Oksman, K. and Sain, M., ACS Symposium Series, Vol. 938, Oxford Press, 06/2006 [No. 10]
Chakraborty A., Sain M., and Kortschot M. "Cellulose microfibres as reinforcing agents for structural materials", in: "Cellulose Composites: Processing, Characterization and Properties", Eds. Oksman, K. and Sain, M., ACS Symposium Series, Vol. 938, Oxford Press, 06/2006 [No. 9]
Sain, M. and Panthapulakkal, S. "Green Fibre Thermoplastic Composites", in: "Green Composites: Polymer Composites and the Environment", Ed. Caroline Baillie, CRC Press, 2004 [No. 8]
Sain, M. and Khunova, V. "Recent Developments in the Reactive Processing of Filled Polyolefines", in Recent Research Developments in Applied Polymer Science, (S.G.Pandalai, Managing Editor). Transworld Research Pub., 2003 [No. 7]
Lin, W.S., Sain, M., and A. Pramanick, "Design Application and Manufacturing of

Composites", Ed. Lo, Poruasatip, Hoa, Nehadi, CRC-press, pp. 283-292, 2002 [No. 6]
Pervaiz, M. and Sain, M. "Sheet Molded Natural Fiber PP Composite for Automotive Applications", in: "Composite Manufacturing", Ed. S.V. Hoa, pp.33-36 Technomic Pub. Inc., Lancaster-Basel., 2002 [No. 5]
Sain, M. "Design, Manufacture and Application of Composites" Eds. Hoa, S., Johnston, A. and Daneault, J., Technomic Pub. Inc., Lancaster-Basel., 2001 [No. 4]
Khunová V. and Sain M.M. "New Developments in Reactive Processing of Thermoplastic Composites", in: "Advanced Polymer Processing Operations", Ed. Cheremisinoff, N. P., Westwood, New Jersey: Noyes Publications, ISBN-10: 0-8155-1426-3, 1998 [No. 3]
Sain, M. and Daneault, C. "Advancement in Reactively Processed Polymer Blends", in: "Handbook of Engineering Polymeric Materials", Ed. Cheremisinoff, N. P., Marcel Dekker Publishing Inc., USA, pp.465-480, 1997 [No. 2]
Sain, M. and Khunova, V. "Reactive Processing of Composites", in "Encyclopedia of Polymer Science and Technology", Marcel Dekker Publishing Inc., USA, 1997 [No. 1]

ARTICLES IN CONFERENCE PROCEEDINGS & CONFERENCE PRESENTATION

Ding, W.D., Park, C.B., and Sain, M., "Effect of Cellulose Nanofibers on the Foaming Behaviors of Poly(Lactic Acid)", 5th Biofoams (international), Sorrento, Italy, October 13-16, 2015 [No. 293]
Armioun, S., Panthapulakkal, S., Tjong, J., and Sain, M., "Renewable, Recyclable, and Lightweight Structural Prototype for Greener Automotive Interior Panels", 65th Canadian Chemical Engineering Conference Canada(CSCHE2015), Calgary, October 4-7, 2015[No. 294]
Obaid, N., Kortschot, M., Sain, M., "Investigating the strain rate-dependent compressive properties of fiber-reinforced soy-based polyurethane foams", First International Conference on Bio-based Building Materials, Clermont-Ferrand, France, June 22nd-24th 2015[No. 293]
Ding, W.D., Chang, E., Jahani, D., Alemdar, A., Wang, Q., Park, C.B., and Sain, M., "Development of PLA/Cellulosic Fibre Composite Foams Using Injection Molding: Foaming and Mechanical Properties", Society of Plastics Engineers, 73th Annual Technical Conference, Technical Papers #451, Indianapolis, Indiana, May 23-25, 2015[No. 292]
Ding, W.D., Chu, R., Park, C.B., and Sain, M., "Isothermal Crystallization Behavior of Poly(Lactic Acid)/Cellulose Nanofiber Composites with Presence of CO2", Society of Plastics Engineers, 73th Annual Technical Conference, Technical Papers, Paper # 2139329, Orlando, Florida, March 23-25, 2015[No. 291]
KC, B., Panthapulakkal, S., Agnelli, J.A.M., Tjong, J., Sain, M. "Development and process optimization of sisal/glass fiber reinforced polypropylene composite" The Composite and Advanced Material Expo, Orlando, FL, USA, October 13-16, 2014 (Oral, Submitted) [No. 290]
Sameni, J., Krigstin, S., and Sain, M. 13th International Symposium on Bioplastics, Biocomposites & Biorefining (ISBBB), Guelph, ON, Canada, May 19-24, 2014 (Oral Presentation) [No. 289]
KC, B., Panthapulakkal, S., Agnelli, J.A.M., Tjong, J., and Sain, M. "Application of computer simulation and Taguchi method to optimize differential shrinkage in bio-based hybrid polypropylene composites" 13th Internation Symposium on Bioplastics, Biocomposites & Biorefining, Guelph, ON, Canada, May 19-24, 2014 (Poster) [No. 288]
Ferhan, M., Yan, N., and Sain, M. "Bio-depolymerization of bark and integration between laccases Vs bark polyaromatics/polyphenols characterize by GC/MS/MS" 13th International Symposium on Bioplastics, Biocomposites & Biorefining (ISBBB), Guelph, ON, Canada, May 19-24, 2014 (Poster) [No. 287]
Ding, W.D., Kuo, P.Y., Park, C.B., and Sain, M. "Morphology and Mechanical Properties of Polylactic AcidCellulose Nanofiber Composite Foams" Society of Plastics Engineers, 72th Annual Technical Conference, Technical Paper # 1886734, Las Vegas, Nevada, April 28-30, 2014 [No. 286]
Ding, W.D., Kuo, P.Y., Kuboki, T., Park, C.B., amd Sain, M. "Foaming of Cellulose Fiber Reinforced Polylactic Acid Composites: The Effect of Cellulose Fiber type and Content" Society of Plastics Engineers, 71th Annual Technical Conference, Technical Paper # 1591117, Cincinnati, Ohio, April 22-24, 2013 [No. 285]
KC, B., Sain, M., and Tjong, J. "Rapid Prototype Development of Bio-composite Engine Beauty Cover" Meeting:

Society of Plastic Engineer Automotive Composite Conference & Exhibition (ACCE), Novi, Michigan, USA, September 11-13, 2013 (Poster) [No. 284]

KC, B., Tjong, J., Bernard, E., and Sain, M. "Odor-free and glossy biocomposite structural part using Rapid Heat Cycle Molding (RCHM) Technology" Meeting: Auto21 Annual Conference, Toronto, Canada, May 21-23, 2013 (Oral) [No. 283]

KC, B., Tjong, J. Sain, M., Doug, C., and Bernard, E. "Injection molding challenges with biocomposite based on computer simulations" Meeting: Canadian Innovation Day, Ford Product Development Centre Showroom, Dearborn, USA, March 1st, 2013 (Oral & poster) [No. 282]

Gu, R., Sui, J., and Sain, M. "Evaluations of moisture uptake and mechanical properties of starch-lignocomposites" BioNib 2nd annual meeting, Guelph, Canada, November 22, 2013 [No. 281]

Gu, R., Vittekova, M., and Sain, M. "Thermal and weather durability of lignocomposites" BioNib 2nd annual meeting, Guelph, Canada, November 22, 2013 [No. 280]

Gu, R. and Sain, M. "Green nanotechnology in nanofiber" 6th International WPC Symposium, Biarritz, France, September 23-24, 2013 [No. 279]

Gu, R. and Sain, M. "Carbon fiber reinforced composites for automotive" 19th International conference on composite materials, Montreal, Canada, July 28-August 2, 2013 [No. 278]

Gu, R. and Sain, M. "Low Carbon Footprint Construction-From Plant Carbon to Green Building" Canada-India Workshop on Building Healthy Communities, Nagpur, India. February 21-22, 2013 [No. 277]

Ding, W.D., Park, C.B., and Sain, M. "Mechanical properties of cellulose nanofiber reinforced polylactic acid composites and their foams" 4th BIOFOAMS (international), p.142, Toronto, Canada, August 27-29, 2013 [No. 276]

Chang, L.C, Hussain, S., Sain, M., and Kortschot, M.T. "Effect of reactive amine catalysts on cell structure and mechanical properties of fibre-reinforced soy-based polyurethane spray foam" Advancements in Fiber-Polymer Composites: Wood Fiber, Natural Fibers and Nanocellulose Conference, Hilton Milwaukee City Center, Wisconsin, USA, 2013 [No. 275]

Chang, L.C., Sain, M, Kortschot, M.T. "The effect of mixing conditions on the morphology and performance of fibre reinforced biofoams" 4th International Conference on Biofoams, Great Hall Hart House, Toronto, Canada, 2013 [No. 274]

Sameni, J., Xu, J., Krigstin, S., and Sain, M. "Bio-based pots with controlled degradation feature for horticultural industry" BioNIB 2nd Annual Meeting, Arboretum Center, University of Guelph, Poster Presentation "won the second prize", 2013 [No. 273]

Sameni, J., Krigstin, S., and Sain, M. "Structural, and thermal characterization of commercial lignin for potentially value added industrial application" BioNIB 1st Annual Meeting, Arboretum Center, University of Guelph, Poster Presentation, 2013 [No. 272]

Krigstin, S., Sameni, J., and Sain, M. "Hydrophobic advancements in pulp molded products" IMFAá s 16th International Molded Fiber Packaging Seminar, Toronto, April 24-25, 2013 [No. 271]

Phillips, S., Kuo, P.Y., Demaria, C., Lessard, L, Yan, N. Huberta, P., and Sain, M. "Development of Multi-Scale Biocomposites from Flax, Nanocellulose and Epoxy by Resin Infusion" NIPMMP conference in Montreal. June 11-12, 2013 [No. 270]

Kuo, P. Y., Sain, M., and Yan, N. "Synthesis and Characterization of a Novel Bio-based Epoxy Resin from Bark Extractive" Oral presented at BIOPOL2013 Conference, Rome, Italy, October 1-3, 2013 [No. 269]

Ghosh, S.B., Bandyopadhyay-Ghosh, S., and Sain, M. "Microstructural development of novel polysaccharide derived hybrid biocomposite foam and evaluation of cytotoxicity" 100th Indian Science Congress, Kolkata, India, January, 2013 (Poster Presentation) [No. 268]

Ding, W.D., Wong, A., Kuboki, T., Park, C.B., and Sain, M. "In Situ Observation of the Foaming Processes of Cellulose Nanofiber Reinforced Poly(Lactic Acid) Biocomposites" Society of Plastics Engineers, 70th Annual Technical Conference, Technical Papers, Paper # PENG-12-60136, Orlando, FL, pp. 164, April 1-4, 2012 [No. 267]

Ding, W.D., Kuboki, T., Zhao, N., Malm, T., Park, C.B., and Sain, M. "Mechanical Properties of Cellulose Nanofiber Reinforced Polylactic Acid Biocomposites and Their Foams" Canadian Society for Mechanical

Engineering (CSME) International Congress, Paper #1569579241, Winnipeg, MB, June 4-6, 2012 [No. 266]
KC, B., Sain, M., and Tjong, J. "Computer-aided injection process analysis of natural fiber reinforced composite (NFRC) engine cover" Meeting: Automotive Partnership Canada Faculty of Forestry, University of Toronto, June 28, 2012 (Poster) [No. 265]
Faruk, O. and Sain, M. "Lignin Enhanced Thermoplastic Polyurethane (TPU) foam Manufacturing, 12th International Conference on Biocomposites: Transition to Green Materials, Niagara Falls, Ontario, Canada, May 6-8, 2012 [No. 264]
Faruk, O., Bledzki, A.K., Fink, H.P., and Sain, M. "Developments and Applications of Natural Fibre Composites from 2000 to 2010, Key Note Presentation, 9th Global WPC and Natural Fibre Composites Congress and Exhibition, Stuttgart, Germany, June 19-20, 2012 [No. 263]
Faruk, O. and Sain, M. "Nanocellulose Enhanced Bio PU Foams for Automotive Part" Bio-Environmental Polymer Society, Annual Meeting, Denton, Texas, USA, September 18-21, 2012 [No. 262]
Sameni, J.K., Sain, M, and Krigstin, S. "Commercialization of a Lignin-Based Product for the Horticultural Market" 12th International Conference on Biocomposites, Oral Presentation, Niagara Falls, Canada, 2012 [No. 261]
Sameni, J. and Sain, M. "Commercialization of Biopot for Horticultural Market" Oral Presentation at DemoCampVLab, Business School, University of Toronto, 2012 [No. 260]
Gu, R. and Sain, M. "Renewable polyurethane foams" 2th Bark biorefinery annual meeting, Toronto, Canada, November 30, 2012 [No. 259]
Kuo, P. Y., Sain, M. and Yan, N. "Synthesis and Properties of Bark-Derived Epoxy Resins" Oral presented at Bark Bio-refinery Conference, 2012 [No. 258]
Phillips, S., Kuo, P.Y., Lessard, L, Huberta, P., Sain, M., and Yan, N. "Characterization of Flax Fabrics and Nanocellulose Modified Epoxy for the Development of Multi-scale Biocomposites by Resin Infusion" NIPMMP conference in Toronto, 2012 [No. 257]
Phillips, S., Kuo, P.Y., Lessard, L, Huberta, P., Sain, M., and Yan, N. "Characterization of Flax Fabrics and Nanocellulose Modified Epoxy for the Development of Multi-scale Biocomposites by Resin Infusion" The 12th International Conference on Biocomposites, 2012 [No. 256]
Ferhan, M., Yan, N., Sain, M. "Demethylation and characterization of lignin from woody biomass" 12th International Conference on Biocomposites (Transition to Green Materials), Marriot Gateway on the Falls Hotel, Niagara Falls, ON, Canada, May 6-8, 2012 (Poster) [No. 255]
Ferhan, M., Yan, N., and Sain, M. "Ligninases production and partial purification of MnP from Brazilian fungal isolate in submerged fermentation" Bark Biorefinery: 2nd Annual Research Meeting, Faculty of Forestry, University of Toronto, November 30, 2012 (Poster) [No. 254]
Konar, S.K. and Sain, M. M. "Synthesis of polyol from soybean oil by a two-step continuous process" 12th International Conference on Biocomposites, Transition to Green Materials, Niagara Falls, Ontario, Canada, May 6-8, 2012 (Poster) [No. 253]
Bandyopadhyay-Ghosh, S. and Sain, M. "Nanotoxicity evaluation of cellulose nanofibres -assessment of cellular, genetic and environmental response" 12th International Conference for Biocomposites, May, 2012, Niagara Falls, Canada (Oral Presentation) [No. 252]
Ghosh, S.B. and Sain, M. "Development and microstructural investigation of modified polysaccharide based polyester biocomposites" 12th International Conference on Biocomposites, Niagara Falls, Canada, May, 2012 (Poster Presentation) [No. 251]
Ding, W.D., Kuboki, T., Koyama, R., Park, C.B., and Sain, M. "Solid-State Foaming of Cellulose Nanofiber Reinforced Polylactic Acid Biocomposites," Society of Plastics Engineers, 69th Annual Technical Conference, Technical Papers, Paper # PENG-11-2010-0595, Boston, MA, p. 756, May 1-4, 2011[No. 250]
Gu, R., Sain, M., and Pervaiz, M. "Global perspective: NF composites in automotive" 5th International WPC Forum of China, Huangshi, China, October 20-22, 2011 [No. 249]
Gu, R. and Sain, M. "Greener foam: Global research, development and commercialization" 19th Annual BioEnvironmental Polymer Society Meeting, Vienna, Austria, September 28-30, 2011 [No. 248]
Ferhan, M., Yan, N., and Sain, M. "Physicochemical Characterization of Lignin based Polyols" Bark Biorefinery,

1st Annual Research Meeting, University of Toronto, Croft Chapter House, October 25, 2011 [No. 247]
Sain, M., Konar, S., Xu, L., and Abeykoon, P. "Synthesis of Polyol from Soybean Oil – Using of Blending Method During Hydroxylation" The Ontario BioCar Initiative, 7th Biannual Research meeting and Advisory Panel Meeting, University of Toronto, Canada, June 3, 2011[No. 246]
Sain, M., Konar, S., and Abeykoon, P. "Synthesis of Polyol from Genetically Modified Soybean Oil Using a Newly Developed Two-step Continuous Process" The Ontario BioCar Initiative, 8th Biannual Research meeting and Advisory Panel Meeting, University of Windsor, Canada, November 18, 2011 [No. 245]
Edalatmanesh, M., Sain, M, and Liss, S.N. "Utilization of Pulp and Paper Mill Waste Secondary Sludge for Nylon Biocomposite Production" SPE Asian, Tokyo, Japan, Feb. 2011 [No. 244]
Gu, R. and Sain, M.* Invited plenary lecture "Overview of biofoams for lightweight auto parts" 4th International Conference Polymeric Materials in Automotive PMA 2011 & European Collaborative IRCO Conference RubberCon. Bratislava, Slovak Republic, 12-14 April 2011 [No. 243]
Ding, W.D., Wong, A., Kuboki, T., Koyama, R., Park, C.B., and Sain, M. "Foaming of Cellulose Nanofiber Reinforced Poly(Lactic Acid) Biocomposites" Forest Products Society 65th International Convention, Portland, OR, June 19-21, 2011[No. 242]
Kuo, P.Y. and Sain M. "Cellulose Nano-fiber Reinforced Epoxy Composites Design and Manufacturing" NIPMMP conference in Montreal, 2011[No. 241]
Phillips, S., Demaria, C, Kuo, P.Y., Lessard, L, Huberta, P., and Sain, M. "Multi-Scale Hybrid Composites by Resin Film Infusion" NIPMMP conference in Montreal, 2011[No. 240]
Rodriguez, Ghosh, S. B., and Sain, M. "Protein modified polysaccharide polyester composites: production and applications", 8th BioCar Research Meeting, November, 2011, Windsor, Canada (Oral Presentation) [No. 239]
Sundar, S. and Sain, M. "The use of cellulose fiber in bio-based composite manufacturing: Improving orientation and dispersion for value addition" Center for Environment, University of Toronto, Canada, 2010[No. 238]
Sain, M., Konar, S., and Xu, L. "Polyol synthesis from soybean oil" The Ontario BioCar Initiative, 5th Biannual Research meeting and Advisory Panel Meeting, University of Guelph, Canada, May 14, 2010 [No. 237]
Sain, M., Xu, L., and Konar, S. "Polyol synthesis from soybean oil by epoxidation and hydroxylation" The Ontario BioCar Initiative, 6th Biannual Research meeting and Advisory Panel Meeting, University of Waterloo, Canada, Nov. 24, 2010 [No. 236]
Stoeffler, K., Ton-That, M., Tan, D., Johanne, L., Luong, J., Wu, C., and Sain, M. "Polylactide composites filled with microcrystalline cellulose, nanocrystalline cellulose and cellulose nanofibers" ANTEC, Orlando, Florida, USA, 2010 [No. 235]
Sundar, S., Sain, M., and Oksman, K. "Chemical Modification of Cellulose Fiber and its Orientation in Magnetic Field" 11th International Conference on Biocomposites, Transition to Green Materials, Toronto, Canada, 2010 [No. 234]
Kuboki, T., Lee, J.W.S., Koyama, R., Park, C.B., and Sain, M. "Mechanical Properties of Cellulose Fiber Reinforced Polypropylene Composite Foams" Canadian Society for Mechanical Engineering Forum, Victoria, BC, June 7-9, 2010 [No. 233]
Baltazar-y-Jimenez, A. and Sain, M. "Imide Modification of GreenCore Fibrereinforced PLA Composites", 5th Ontario Biocar Initiative, General Research Meeting and Advisory Panel Meeting. University of Guelph, ON, Canada, May 14, 2010 [No. 232]
Edalatmanesh, M., Sain, M., and Liss, S. "Utilization of Pulp and Paper Mill Secondary Sludge for Nylon Biocomposite Production", 11th International Conference on Biocomposites, Toronto, Canada, May 2-4, 2010 [No. 231]
Ummartyotin, S., Juntaro, J., Helmy, A., Sain, M., and Manuspiya, H. "Bacterial cellulose as a substrate for OLEDs device NSERC Network for Innovative Plastic Materials and Manufacturing Processes (NNIPMMP)", University of Toronto, Toronto, Canada, September 24, 2010 [No. 230]
Ummartyotin, S., Manuspiya, H., and Sain, M. "Nano-scale Cellulose Composite as an Effective Substrate for Organic Light Emitting Diodes (OLEDs) Application", Polymers and the Environment: Emerging Green Technologies and Science being co-sponsored by the BioEnvironmental Polymer Society (BEPS), Sheraton

Centre Toronto Hotel, Toronto, Canada, October 13-16, 2010[No. 229]
Gu, R. and Sain, M. "Soy-based Polyurethane foam" 6th Bi-annual BioCar Research Meeting and Advisory Panel Meeting, Waterloo, Canada, November 24th, 2010 [No. 228]
Gu, R. and Sain, M. "Where wood plastic composites go" 4th International Summit Wood Plastic Composite. Nanjing, China, October 19-20, 2010 [No. 227]
Tyagi, V. and Sain, M. "Analysis and Identification of Fungal proteins participating in polymer modification" 6th Ontario Biocar Initiative, General Research Meeting and Advisory Panel Meeting. University of Guelph, ON, Canada, November 6, 2010 [No. 226]
Tyagi, V. and M. Sain "Analysis and Identification of Fungal proteins participating in polymer modification" 5th Ontario Biocar Initiative, General Research Meeting and Advisory Panel Meeting. University of Guelph, ON, Canada, May 14, 2010 [No. 225]
Kuboki, T., Lee, J., Park, C., and Sain, M. "Foam Injection Molding of Cellulose Fiber Reinforced Polypropylene Composites" SPE, ANTEC, Technical Paper, Chicago, IL, June 22-24, 2009 [No. 224]
Baltazar-y-Jimenez, A. and Sain, M. "Effect of Ion-Dipole Interactions on the Thermal Properties of Sorona", 4th Ontario Biocar Initiative, General Research Meeting and Advisory Panel Meeting. University of Windsor, ON, Canada, November 6, 2009 [No. 223]
Zhu, M., Khazabi, M., Bandyopadhyay-Ghosh, S., and Sain, M. "Micro and Nano Reinforcement Based Rigid and Flexible Polyurethane Foam From Soy-Polyol" 2nd International Conference on Biofoams, Niagara Falls, Ontario, Canada, October 26-28, 2009 [No. 222]
Zhu, M., Ghosh Roy, S., Khazabi, M., Bandyopadhyay-Ghosh, S., and Sain, M. "Rigid and flexible polyurethane foams prepared from soy oil based polyol", 2nd International Conference on Biofoams, Niagara Falls, Canada, October, 2009 (Oral Presentation) [No. 221]
Baltazar-y-Jimenez, A. and Sain, M. "Sorona-based Renewable Composites for Automotive Applications" Poster session, 3rd Ontario BioCar Initiative, 3nd Biannual Research Meeting and Advisory Panel Meeting, University of Toronto, Canada, June 2, 2009 [No. 220]
Ghosh Roy, S., Bandyopadhyay-Ghoshl, S., and Sain, M. "Novel Approaches for Synthesis of Polyols from Soy Oils" 3rd Ontario BioCar Initiative, 3nd Biannual Research Meeting and Advisory Panel Meeting, University of Toronto, Canada, June 2, 2009 [No. 219]
Sundar, S. and Sain, M. "Spectroscopic, Thermal & Morphological Characterization of Micro Crystalline Cellulose and Cellulose Long Fiber Modified by Iron Salts" 3rd Ontario BioCar Initiative, 3nd Biannual Research Meeting and Advisory Panel Meeting, University of Toronto, Canada, June 2, 2009 [No. 218]
Sundar, S. and Sain, M. "Surface Modification and Orientation of Micro-cellulose Entity for Manufacturing Property Enhanced Composites" Forest products society-Eastern Canadian section, Spring conference on Bioenergy, Montreal, 2009 [No. 217]
Wu, C. and Sain, M. "An Overview of Cellulose Nanotechnology: Research and Application" 10th International Conference on Wood & Biofiber Plastic Composites & Cellulose Nanocomposites Symposium, Madison, Wisconsin, May 11-13, 2009 [No. 216]
Bandyopadhyay-Ghosh, S., Ghosh, S. B., Ghosh Roy, S., and Sain, M. "Synthesis and Characterization of the Next Generation Bio-polyol and Bio-foam", 8th World Congress of Chemical Engineering, Montreal, Canada, 23-27 August, 2009 (Oral Presentation) [No. 215]
Baltazar-y-Jimenez, A. and Sain, M. "Prototype of an automotive part by integrating structural & optical functionality in a single module" National Institute of Nanotechnology, Arboranano scientific meeting, Edmonton, Alberta, Nov 17, 2009 [No. 214]
Tyagi, V., B. Saville, and Sain, M. "Analysis and Identification of Fungal Proteins Responsible for Biopolymer Synthesis and Modification" Ontario BioCar Initiative, 3rd General Research Meeting and Advisory Panel Meeting. University of Toronto, ON, Canada, June 3, 2009 [No. 213]
Tyagi, V., Saville, B, and Sain, M. "Analysis and Identification of Fungal Proteins Responsible for Biopolymer Synthesis and Modification" Ontario BioCar Initiative, 4th General Research Meeting and Advisory Panel Meeting. University of Windsor, ON, Canada, November 6, 2009 [No. 212]
Edalatmanesh, M., Sain, M., and Liss, S. "Qualitative and Quantitative Characterization of a Pulp and Paper Mill

Secondary Sludge" CONFOR 2009 [No. 211]
Pervaiz, M. and Sain, M. "The Extraction of Extracellular Polymeric Substances (EPSs) From Paper Mill Sludge As A Precursor Of Wood Adhesive" PAPTAC Annual Meeting, Montréal, Canada, February 3-6, 2009 [No. 210]
Kuboki, T., Lee, J., Park, C., and Sain, M. "Injection Molding and Mechanical Properties of Cellulose Fiber Reinforced Polypropylene Composite Foams" 10th International Conference on Wood & Biofiber Plastic Composites & Cellulose Nanocomposites Symposium, Madison, Wisconsin, May 11-13, 2009 [No. 209]
Kuboki, T., Park, C., Zhang, J., Wu, Q, and Sain, M. "Cellulose Fiber Reinforced Polypropylene Composite Foams in Extrusion" 4th Wood Fibre Polymer Composites International Symposium, Bordeaux, Cedex, France, March 30-31, 2009 [No. 208]
Kuboki, T., Lee, Y.H., Park, C.B., and Sain, M. "Mechanical Properties and Foamability of Cellulose Fiber Composites," CSME Forum, Technical Paper #1569102337, Ottawa, ON, June 5-8, 2008 [No. 207]
Kuboki, T., Lee, Y.H., Lee, J.W.S., Zhu, W., Park, C.B., Sain, M. "Effects of Clay on Mechanical Properties of Injection Molded High-Density Polyethylene/Clay Nanocomposite Foams" SPE, ANTEC, Technical Paper #0448, Milwaulkee, WI, May 4-8, 2008 [No. 206]
Lee, Y.H., Sain, M., Kuboki, T., and Park, C.B. "Extrusion Foaming of Nano-Clay-Filled Wood Fiber Composites for Automotive Applications," SAE 2008 World Congress, Technical Paper #2008-01-1264, Detroit, Michigan, April 14-17, 2008 [No. 205]
Edalatmanesh, M., Sain, M., and Liss, S. "Producing Biocomposite Materials from Waste Biosolid" 10th International Conference on Progress in Biofibre Plastic Composites, Toronto, Canada, May 11-13, 2008 [No. 204]
Sundar, S. and Sain, M. "Surface Modification of Cellulose Long Fiber" Ontario BioCar Initiative, 2nd Biannual Research Meeting and Advisory Panel Meeting. ON, Canada, November 2, 2008 [No. 203]
Sundar, S. and Sain, M. "Cellulose Modification by Metal (Fe) Salts and Enhancement of Mechanical Properties" 10th International Conference on Progress in Biofibre Plastic Composites, May 12-13, Toronto, Canada, 2008 [No. 202]
Tyagi, V., Saville, B., and Sain, M. "Sugar-based Polymers by Fungal Route", Ontario BioCar Initiative, 2nd General Research Meeting and Advisory Panel Meeting. University of Waterloo, ON, Canada, November 3, 2008 [No. 201]
Awal, A., Ghosh, S.B., Bandyopadhyay-Ghosh, S., and Sain, M. "Evaluation of Mechanical Properties of Wood Pulp Reinforced Biocomposite Fibres" 10th International Conference on Progress in Biofibre Plastic Composites, Toronto, Canada, May 12-13, 2008 (Poster Presentation) [No. 200]
Awal, A., Ghosh, S.B., Bandyopadhyay-Ghosh, S., and Sain, M. "Novel Composite Fibres: A Green Approach", Bio-energy – Panacea, or Pandora's box?, Spring Conference, Forest Products Society, Eastern Canadian Section, Montreal, Canada, May 1-2, 2008 [No. 199]
Baltazar-y-Jimenez, A. and Sain, M. "On the Way to High-Performance Bio-based Composites for Automotive Applications" Ontario BioCar Initiative, 2nd General Research Meeting and Advisory Panel Meeting. University of Waterloo, ON, Canada, November 2, 2008 [No. 198]
Lee, Y.H., Kuboki, T., Park, C.B., and Sain, M. "Effect of Nanoclay on Extrusion Foaming of WF/PP/Clay Composites Using N2," AIChE Annual Meeting, Philadelphia, PA, November 16-21, 2008 [No. 197]
Ghosh, S.B., Kuboki, T., Law, S., Lee, Y.H., Sain, M., and Park, C.B. "Light Weight High Performance Biomaterials and Nano Technology for Green Automotive Applications" AUTO21 2008 Conference, Collaboration in Motion, London, Ontario, Canada, June 2-4, 2008 (Poster Presentation) [No. 196]
Bandyopadhyay-Ghosh, S., Ghosh Roy, S., and Sain, M. "Soybean Oil Modification for Polyurethane Foam", The Ontario BioCar Initiative, 2nd Biannual Research Meeting and Advisory Panel Meeting, Davis Centre, University of Waterloo, Canada, November 3, 2008 [No. 195]
Bandyopadhyay-Ghosh, S. and Sain, M. "Production, Challenges and Potential of Cellulose Nanofibres", International Symposium on Polymers and the Environment: Emerging Technology and Science, October 7-8, 2008, Nashua, New Hampshire, USA (Oral Presentation) [No. 194]
Bandyopadhyay-Ghosh, S., Ghosh, S.B., Ghosh Roy, S., and Sain, M. "Synthesis and Characterization of Next Generation Polyurethane Foam from Soybean Oil" Canada-France Partnership Day, Nano Bio-composites,

Centre for Biocomposites and Biomaterials Processing, University of Toronto, ON , Canada, May 14, 2008 [No. 193]

Sundar, S. and Sain, M. "Surface Modification and Orientation of Micro Cellulose Entity for Manufacturing Property Enhanced Composites" FPS Eastern Canadian Section Spring Conference – Bio-Energy – Panacea, or Pandora's Box? Spring Conference, Forest Products Society, Eastern Canadian Section, Montreal, Canada, May 1-2, 2008 [No. 192]

Sundar, S. and Sain, M. "Property Enhancement of Cellulose-based Polymer Composites by Fiber Orientation" 10th International Conference on Progress in Biofibre Plastic Composites, Toronto, Canada, May 2008 [No. 191]

Kim, S.G., Leung, S.N., Park, C.B., and Sain, M. "Replacement of Cross-Linked PP Foams and Solid TPO Products with Recyclable TPO Foams" Foams, Charlotte, NC, September 10-11, 2008 [No. 190]

Kuboki, T., Lee, Y.H., Park, C.B., and Sain, M., "Effects of Dicumyl Peroxide on the Mechanical Properties of Rubber Toughened Natural Fibre Composites", 10th International Conference on Progress in Biofibre Plastic Composites, Toronto, Ontario, Canada, May 12-13, 2008 [No. 189]

Kuboki, T., Lee, Y.H., Lee, J.W.S., Park, C.B., and Sain, M. "Injection Molding and Mechanical Properties of Cellulose Fiber Reinforced HDPE Composite Foams" 10th International Conference on Progress in Biofibre Plastic Composites, Toronto, Ontario, Canada, May 12-13, 2008 [No. 188]

Wang, Z., Xiao, H., and Sain, M. "Poly (butyl acrylate)-Modified Cellulose Fibres for Toughening WPC" SAE World Congress, Technical Paper 2007-01-0574, DOI: 10.4271/2007-01-0574, 2007 [No. 187]

Lee, Y.H., Kuboki, T., Park, C.B., and Sain, M. "Influence of interfacial interaction on the foamability of wood fiber/HDPE composites" SAE World Congress, Technical Paper # 2007-01-0577, DOI: 10.4271/2007-01-0577, April 16-19, Detroit, Michigan, USA, 2007 [No. 186]

Kuboki, T., Park, C., Lee, Y., and Sain, M. "Mechanical Properties of Rice Hull/High Density Polyethylene and Wood/High Density Polyethylene Composites" SAE World Congress, Technical paper #2007-01-0576, DOI: 10.4271/2007-01-0576, April 16-19, Detroit, Michigan, USA, 2007 [No. 185]

Kim, S., Park, C., and Sain, M. "Foaming Visualization of Thermoplastic Polyolefin (TPO) Blends with N2" SAE World Congress, Technical Paper #2007-01-0572, DOI: 10.4271/2007-01-0572, Detroit, April 16-19, 2007 [No. 184]

Kuboki, T., Lee, Y.H., Park, C.B., and Sain, M. "Foaming Behaviour of Cellulose Fibre Reinforced High Density Polyethylene Composites", Annual Technical Conference of Society of Plastics Engineers, Paper #303253, May 6-10, Cincinnati, Ohio, USA. pp. 2214-2218, 2007 [No. 183]

Kim, S.G., Lee, J.W.S., Park, C.B., and Sain, M. "Strategies for Enhancing Cell Nucleation of Thermoplastic Polyolefin (TPO) Foam" SPE, ANTEC, Technical Papers, Paper #304101, Cincinnati, OH, May 6-10, 2007 [No. 182]

Lee, Y.H., Kuboki, T., Park, C.B., and Sain, M. "Effect of Nano-Clay on Foaming of WF/HDPE Composites", Proceedings of Annual Technical Conference of Society of Plastics Engineers, Paper #304092, May 6-10, Cincinnati, Ohio, USA. pp. 2224-2229, 2007 [No. 181]

Alemdar A., Oksman K., and Sain M. "Reinforcement Capability of Wheat Straw Fibers from Micro to Nano-size?" Proceedings in 9th International Conference on Wood & Biofiber Plastic Composites, May 2007, Madison, Wisconsin, USA, 2007 [No. 180]

Sain, M., Behzad, T., and Pervaiz, M. "Market and Product Opportunities for Woodfiber-Plastic and Natural Fiber Plastic Composites Beyond the Building Industry", 9th International Conference on Wood & Biofiber Plastic Composites, Madison, USA, 2007 [No. 179]

Ghosh, S. B. and Sain, M.M. "Synthesis and Characterization of Bio-Polyol for Next Generation Polyurethane" Proceedings of 4th International Conference on Science and Technology of Composite Material, 9-12th December, 2007, Rio de Janeiro, Brazil (Oral presentation) [No. 178]

Kim, S.G., Lee, K.-M., Park, C.B., and Sain, M. "Strategies for Making Fine-Celled and Large, Expanded Thermoplastic Vulcanizate (TPV) Foam" TPE2007, Cologne, Germany, October 23-24, 2007 [No. 177]

Kim, S.G., Park, C.B, and Sain, M. "Effect of Blend Morphology on Thermoplastic Polyolefin (TPO) Foams Blown with Nitrogen" PPS-2007, Shanghai, China, July 12-14, 2007 [No. 176]

Sundar, S. and Sain, M.M. "Cellulose orientation in polymer matrix" Discovery Ontario Center of Excellence, Toronto, Canada, 2007 [No. 175]

Kuboki, T., Lee, Y.H., Park, C.B., and Sain, M. "Mechanical Properties of Cellulose Fibre Reinforced High Density Polyethylene Composites" 9th International Conference on Wood & Biofiber Plastic Composites, Madison, Wisconsin, May 21-23, 2007 [No. 174]

Lee, Y.H., Kuboki, T., Park, C.B., and Sain, M. "The Effects of Nanoclay on the Extrusion Foaming of Wood Fiber/Polyethylene Nanocomposites" Simha Symposium on Polymer Physics and Polymer Nanocomposites, Boucherville, Quebec, Canada, October 17-19, 2007 [No. 173]

Lee, Y.H., Kuboki, T., Park, C.B., and Sain, M. "Effect of Nano-Clay on Foaming of WF/PP/Clay Composites" 9th International Conference on Wood & Biofiber Plastic Composites, Madison, Wisconsin, May 21-23, 2007 [No. 172]

Behzad, T. and Sain, M. "The Effect of Fiber Surface Treatment on the Performance of Hemp Fiber/Acrylic Composites for Automotive Structural Parts" SAE Technical Paper 2006-01-0005, USA, April, DOI: 10.4271/2006-01-0005, 2006 [No. 171]

Panthapulakkal, S., Law, S., and Sain, M. "Performance of Injection Molded Natural Fiber – Hybrid Thermoplastic Composites for Automotive Structural Applications", SAE World Congress, Technical Paper #2006-01-0004, DOI: 10.4271/2006-01-0004, Detroit, April, USA, 2006 [No. 170]

Kim, S.G., Park, C.B., and Sain, M. "Foamability of Thermoplastic Vulcanizates (TPVs) with Various Physical Blowing Agents (PBAs)" SAE World Congress, Technical Paper #2006-01-0972, DOI: 10.4271/2006-01-0972, Detroit, April 3-6, 2006 [No. 169]

Kuboki, T., Lee, Y.H., Park, C.B., and Sain, M. "Mechanical Properties of Rice Hull/Polypropylene Composites" SPE, ANTEC, Technical Papers, Paper #103202, NC, May 7-11, 2006 [No. 168]

Lee, Y., Park, C., and Sain, M. "Strategies for Intercalation and Exfoliation of PP/Clay Nanocomposites" SAE Technical Paper 2006-01-0132, DOI: 10.4271/2006-01-0132, 2006 [No. 167]

Gulati, D. and Sain, M. "Effect of Fungal Modification on Fibre-matrix Adhesion in Natural Fibre Reinforced Polymer Composites" SAE World Congress, Technical Paper #2006-01-0006, DOI: 10.4271/2006-01-0006, 2006 [No. 166]

Chakraborty A., Sain M. and Kortschot M. "Wood microfibres – effective reinforcing agents for composites", SAE (Society of Automotive Engineers) World Congress, Technical Paper #2006-01-0106, DOI: 10.4271/2006-01-0106, Detroit, MI, USA, April 3-6, 2006 [No. 165]

Chakraborty A., Sain M. and Kortschot M. "A study of microfibre reinforced biocomposite films" Progress in Woodfibre-Plastic Composites, Toronto, May 1-2, 2006 [No. 164]

Banik, I. and Sain, M. "Soy-polyol based flexible polyurethane foam" Progress in Wood and Biofiber Plastic composites International Conference, Toronto Marriott Eaton Centre, May 1, 2006 [No. 163]

Sreekumar, J. and Sain, M. "Utilization of Enzymes in cellulose microfibre generation" TAPPI International Conference on Nanotechnology for the Forest Products Industry, April 2006 [No. 162]

Janardhnan S., Sain, M., and Pervaiz M. "Novel SMA Chemistries in Surface Sizing of Paper and Boards" 92nd Annual Meeting PAPTAC, February 6-10, 2006, Montreal, Canada [No. 161]

Krigstin S. and Sain, M. "Utilization of Recycled Papermill Sludge for Value-Added Bio-Products" Candian Pulp and Paper Graduate Student Seminar, 92nd PAPTAC Annual Meeting, Monteal, PQ, February 9, 2006 [No. 160]

Krigstin S. and Sain, M. "Utilization of Recycled Papermill Sludge for Value-AddedBio-Products" Ontario Centres of Excellence, Discovery 2006 – Bridging the Innovation to Commercialization Gap, Poster Session, February 7, 2006 [No. 159]

Lee, Y.H. "Effect of Clay Dispersion on the Mechanical Properties and Flammability of Wood Fiber/Clay/HDPE Composites" UT-MMO Industry Consortium for Cellular and Micro-Cellular Plastics (CCMCP) Progress Review Meeting, June 26, 2006 [No. 158]

Lee, Y.H., Zheng, W., Park, C.B., and Sain, M. "Strategies for Intercalation and Exfolaition of PP/Clay

Nanocomposites" SAE2006 World Congress, 06M-109, Detroit, MI, April 3-6, 2006 [No. 157]
Lee, Y.H., Kuboki, T., Park, C.B., and Sain, M. "Effect of Clay Dispersion on the Mechanical Properties and Flammability of HDPE/Wood-fiber/Clay Composites" 6th Global Wood & Natural Fibre Composites Symposium, Kassel, Germany, April 5-6, 2006 [No. 156]
Lee, Y.H., Kuboki, T., Park, C.B., and Sain, M. "Extrusion Foaming of Rice-Hull/Plastic Composites with a Physical Blowing Agent" Progress in Wood & Bio-fibre Plastic Composites Conference 2006, Toronto, Ontario, May 1-2, 2006 [No. 155]
Lee, Y.H., Guo, G., Park, C.B., and Sain, M. "Flame Retarding Effects of Nano-Clay on Wood Fiber Composites" Progress in Wood & Bio-fibre Plastic Composites Conference 2006, Toronto, Ontario, Canada, May 1-2, 2006 [No. 154]
Kuboki, T., Lee, Y.H., Park, C.B., and Sain, M. "Improvement of Impact Resistance for Rice Hull/Polypropylene Composites" Progress in Wood & Bio-fibre Plastic Composites Conference 2006, Toronto, Ontario, Canada, May 1-2, 2006 [No. 153]
Panthapulakkal S., Behzad, T., Law S., Kuboki T., Lee Y.H., Wang Z., Sain M., Park C.B., and Xiao H. "High Performance Natural Fiber Composites for Automotive Applications" AUTO21 2006 HQP Conference, Barrie, Ontario, Canada, May 15-17, 2006 [No. 152]
Pervaiz, M. and Sain, M. "Next Generation Developments in Polymeric Sizing Technology" PIRA Sizing Conference, March 22-23, 2006, Montreal, Canada [No. 151]
Pervaiz, M. and Sain, M. "Biorefinery: Opportunities and Barriers for Petro-Chemical Industries" 92nd Annual Meeting PAPTAC, February 6-10, 2006, Montreal, Canada [No. 150]
Panthapulakkal, S., Law, S., and Sain, M. "Injection molded natural fiber and hybrid thermoplastic composites for automotive structural applications", Proceedings of 6th Global wood and natural fibre composites symposium, Kassel, Germany, April 2006 [No. 149]
Panthapulakkal, S., Behzad, T., Law, S., Kuboki, T., Lee, Y.H., Wang, Z., Sain, M., Park, C.B., and Xiao, H. "High Performance Natural Fiber Composites for Automotive Applications" Auto-21 HQP conference, May 10-12, 2006 [No. 148]
Panthapulakkal, S., Law, S., and Sain, M. "Injection molded thermoplastic composites for high performance automotive applications" Progress in wood fibre plastic composites, May 1-2, Toronto, 2006 [No. 147]
Kim, S.G. and Sain, M. "Fine-Celled Foam Structure for Automotive TPO Components" AUTO21 HQP Conference and Poster Competition: May 15-17, Barrie, Ontario, 2006 [No. 146]
Kim, S.G. and Sain, M. "Fine-Celled Foam Structure for Automotive TPO Components" Automotive Parts Manufacturers Association, Hamilton, Ontario, May 10-11, 2006 [No. 145]
Janardhnan, S. and Sain, M. "Enzymatic modification of natural fibres for energy efficient generation of cellulose microfibres" 8th annual NSTI Nanotech Conference 2006, May 8-12, Boston, MA [No. 144]
Behzad , T. and Sain, M. "Numerical Modeling of Hemp Fiber/ Thermoset Composites for Automotive Application" Wood fiber Plastic Conference, Toronto, Canada, May 2006 [No. 143]
Behzad, T. and Sain, M. "Simulation of Heat Transfer and Cure in the Molding Process of the Hemp Fiber/Thermoset Composite" 6th Global Wood and Natural Fiber Composites Symposium, Kassel, Germany, April 2006[No. 142]
Behzad, T. and Sain, M. "Development of Natural Fiber Composites for Automotive Applications", OCE Conference, February 2006 [No. 141]
Wang, B. and Sain, M. "Isolation and Dispersion of Soybean Stock Nanofibers in a Plastic Matrix" Sixth Joint Canada-Japan Workshop on Composites, Toronto, Canada, Aug 24-26, 2006 [No. 140]
Wang, B. and Sain, M. "Dispersion of Hemp based Nanofiber in Plastic Matrix" Emerging Materials Knowledge Conference, Toronto, Canada, June 16, 2006. [No. 139]
Wang, B. and Sain, M. "Dispersion of Soybean Stock Nanofibers in a Plastice Matrix" Progress in Wood Fibre-Plastic Composites Conference, Toronto, Canada. May 1-2, 2006 [No. 138]

Mohini Sain
137 articles in conference proceedings from 1983 - 2005

PATENTS

ISSUED PATENTS

US 8940132 – "MANUFACTURING PROCESS FOR HYBRID ORGANIC AND INORGANIC FIBRE-FILLED COMPOSITE MATERIALS", Mohini M. Sain, Suhara Panthapulakkal and Shiang F. Law, January 27th, 2015

CA 2141485 – MANUFACTURING PROCESS FOR HIGH PERFORMANCE SHORT LIGNO-CELLULOSIC FIBRE THERMOPLASTIC COMPOSITE MATERIALS", Mohini M. Sain, Suhara Panthapulakkal and Shiang F. Law, October 7, 2014

US 8852488 – "MANUFACTURING PROCESS FOR HIGH PERFORMANCE SHORT LIGNO-CELLULOSIC FIBRE-THERMOPLASTIC COMPOSITE MATERIALS", Mohini M. Sain, Suhara Panthapulakkal and Shiang F. Law, October 7, 2014

KR 10-1410635 – "MANUFACTURING PROCESS FOR HIGH PERFORMANCE LIGNOCELLULOSIC FIBRE COMPOSITE MATERIALS", Mohini M. Sain, Suhara Panthapulakkal and Shiang F. Law, June 16th, 2014

CA 2527325 – "MANUFACTURING PROCESS FOR HIGH PERFORMANCE LIGNOCELLULOSIC FIBRE COMPOSITE MATERIALS", Mohini M. Sain, Suhara Panthapulakkal, and Shiang F. Law, May 6, 2014

CA 2560349 – "MANUFACTURING PROCESS FOR HYBRID ORGANIC AND INORGANIC FIBRE-FILLED COMPOSITE MATERIALS", Mohini M. Sain, Suhara Panthapulakkal, and Shiang F. Law, April 22, 2014

CA 2141485 – "PROCESO DE FABRICACION PARA MATERIALS MIXTOS DE FIBRA LIGNOCELULOSICA DE ALTO RENDIMIETO", Mohini M. Sain, Suhara Panthapulakkal and Shiang F. Law, 26 de marzo de 2014

MX 318775 – "PROCESO DE FABRICACION PARA MATERIALS MIXTOS DE FIBRA LIGNOCELULOSICA DE ALTO RENDIMIETO", Mohini M. Sain, Suhara Panthapulakkal and Shiang F. Law 26 de Marzo de 2014

CA 2477564 – "PROCESS TO MANUFACTURE GREENER THERMOSETTING COMPOSITES OF PRE-SHAPED STRUCTURE", Mohini M. Sain, March 18, 2014

US 8303701 – "MODIFIED THERMOPLASTIC STARCH FROM OPHIOSTOMA ULMI POLYSACCHARIDE CONVERSION", Mohini Sain and Robert Jeng, November 6, 2012

US 7943349 – "MODIFIED THERMOPLASTIC STARCH FROM OPHIOSTOMA ULMI POLYSACCHARIDE CONVERSION", Mohini Sain, Robert Jeng, and Martin Hubbes, May 17, 2011

CA 2407880 – "PROCESS TO MANUFACTURE HIGH IMPACT NATURAL COMPOSITES", Mohini M. Sain and Muhammad Pervaiz, February 1, 2011

CA 2350112 – "PROCESS TO IMPROVE THERMAL PROPERTIES OF NATURAL FIBRE COMPOSITES", Mohini Sain, June 29, 2004

US 5549787 – "TREATMENT OF WASTE PRINTED PAPERS WITH SURFACE ACTIVE POLYMERIC COMPOSITIONS TO PRODUCE BRIGHTER PULP", Mohini M. Sain and Claude Daneault, August 27, 1996

PATENT APPLICATIONS

CA 2141485 – TREATMENT OF WASTE PRINTED PAPERS WITH SURFACE ACTIVE POLYMERIC COMPOSITIONS FOR IMPROVED RECYCLABILITY
Inventors: Claude Daneault, Mohini M. Sain

CA 2214957 – PROCESS TO PRODUCE BRIGHT PULP IN AN ELECTROCHEMICAL REACTOR

Inventors: Claude Daneault, Robert Sylvain, Mohini Mohan Sain

CA 2230315 – PROCESS FOR INCREASING MECHANICAL WOOD PULP BRIGHTNESS IN A REFINER

Inventors: Celine Leduc, Claude Daneault, Mohini M. Sain

CA 2437616 – MANUFACTURING OF NANO-FIBRILS FROM NATURAL FIBRES, AGRO BASED FIBRES AND ROOT FIBRES

Inventors: Mohini M. Sain, Arpana Bhatnagar

CA 2549844 – SOLID PHASE DISPERSION AND PROCESSING OF MICRO-AND NANO-CELLULOSIC FIBRES IN PLASTIC PHASE TO MANUFACTURE BIO-NANOCOMPOSITE PRODUCTS OF COMMERCIAL INTEREST

Inventors: Mohini M. Sain

CA 2728384 – MODIFIED THERMOPLASTIC STARCH FROM OPHIOSTOMA ULMI POLYSACCHARIDE CONVERSION

Inventors: Mohini Sain, Robert Jeng, Martin Hubbes

US 20080146701 – MANUFACTURING PROCESS OF CELLULOSE NANOFIBERS FROM RENEWABLE FEED STOCKS

Inventors: Mohini M. Sain, Arpana Bhatnagar

US 20050245161 – THERMO DURABLE AND HIGH PERFORMANCE NATURAL FIBER MOLDED COMPOSITES MANUFACTURING PROCESS

Inventors: Mohini M. Sain, Tayebeh Behzad

SIGNIFICANT INVITED LECTURES

Biomaterials, – NRC Talk , Montreal, Feb 6, 2007[No. 67]
Bioworld. Orlano – Panel Participation., March 23, 2007[No. 66]
Bordeaux, France –Invited Talk on WPC – World Market March 28, 2007[No. 65]
Dupont BioCar Presentation – Toronto, April 17, 2007[No. 64]
Winnipeg Bio-initiative Invited Talk; MB, April 18, 2007[No. 63]
SPE- injection Molding Talk; Toronto, ON , April 19, 2007[No. 62]
France Champagne Talk on Bioproducts- April 27, 2007[No. 61]
Japan Mission, Canadian Consulate, Tokyo, Biorefinery and Biomaterials- October 16, 2007;[No. 60]
Industrial Biomaterials, October 18, 2007- Osaka University, Japan.[No. 59]
Sain, M. “Crossroads of Biotech” – 11th Edition - BioComposites using Natural Fibres: Beyond Commodities: Biomaterials and Biochemicals: March 22, 2006 [No.58]
Sain M.; Advancement in sizing in papermaking and nano-polymer in sizing: PIRA (UK) – Invited Talk – “Sizing Symposium” Montreal, Canada, March 22, 2006 [No.57]
Sain, M.; Growth of Natural Fibre in Automotive Industry: Web-based invited talk-Alberta Biofibre Network; Februay 16, 2006. [No.56]
Sain, M. “Opportunities and Challenges in Bioplastics Growth in Biorefinery”; February 9, 2006; Paptac Special Session on Biorefinery- Montreal, Canada[No.55]
Sain, M. “Biofibre in Autotomotive, Building and Other Applications” EMK- OCE Meeting, Dupont Centre, Kingston, January 31, 2006[No.54]
Sain, M "NCE-Auto-21 Recent Advancement in Renewable Materials” Alberta Government; Economic Dev. Sector , Edmonton, AL. January 23rd, 2006. [No.53]

52 talks from 1993 to 2005

CREATIVE PROFESSIONAL ACTIVITIES

Organization of symposia, conferences or workshops

German- Ministry of Research and Innovation (MRI) Workshop on Ontario Biomaterials

Prospect; University of Toronto, September 27, 2007
University Of Toronto – CTBA France Collaborative Workshop, Biomaterials; August, 2006
SPE Symposium; Toronto Chapter; April 19, 2007.
Auto-21 Workshop , Toronto Chapter; August 2005, University of Toronto
Biomaterials Mini Symposium; Toronto Chapter; University of Toronto, March 28, 2006
European Science Foundation review Panel
Organization ACS Symposium on Nanocomposites; San Diego, CA, March 11-18, 2005
Industry Canada Biorpoducts Strategy Development Council
Candian Standard Association (CSA) Review Panel
Member of Ontario Bioproduct Council (Review Panel)
Organization Scientific Committee of Network of Centre of Excellence Auto21st Annual Conference; June 2002, Toronto, ON
Organization Group Leader (Natural Fiber and Packaging) in SUMAT- European Union 6th Framework International Research Committee; HQ: Helsinki, Finland; meeting Brussels, Belgium
Founding Member of Canadian Natural Composite Council (CNCC)
National/international research cooperation

- Involved in nation-wide networking: Auto 21st Century NCE program (involved 8 participants research investigators from five Academic and research Institutions in Canada); worked as a Team Leader in Natural Fiber Project development under Composite manufacturing and Processing Theme.
- Developing international research program in Biopolymers with Sweden, France, Brazil, and Germany.
- Project Leader for Network of Centre of Excellence; Biomaterials
- Integrated program development in Ontario Biotechnology Initiative directed by Ministry of Opportunity and Innovation under BioAuto Council, Ontario Chemical Value Chain and SOBIN institutional collaboration in Northern, Eastern and Southern Ontario.
- Developing Biocar Research Program as Program Leader involving UofWaterloo, UofWindsor, UofQueens, Uof Toronto and Uof Guelph
- Alberta-SK- Manitoba Biofibres and Bioplastics Research Strategy Development Collaboration
- Involved in nation-wide networking: Auto 21st Century NCE program (involved 8 participants research investigators from five Academic and research Institutions in Canada); worked as a Team Leader in Natural Fiber Project development under Composite manufacturing and Processing Theme
- Project Leader for Network of Centre of Excellence; Natural Fibre Composites
- Integrated program development in Ontario Biotechnology Initiative directed by Ministry of Opportunity and Innovation under ULTERN, NOBI and OBIS institutional collaboration in Northern, Eastern and Southern Ontario
- Involved in developing New Network of Center of Excellence (NCE) in Green Chemistry; submitted full proposal November 2002 (Involved 5 universities including McGill, McMaster, Quebec and UBC in natural fiber research)
- Developing international research program in Biopolymers with Norway, Denmark, Czech Republic under NATO Collaborative Program; (project collaboration is in place). Acting as a Lead **Researcher**
- Acted as Project Leader (natural fiber) from Canadian Institutional Participation in two different European Union 6th Frame work Research program initiatives involving 76 institutional

partners from Europe (typically, France, German, Spain, Italy, Finland, Sweden, Belgium, Holland) and the USA (NY Polytechnic) in Biotechnology Research for paper and composite applications

- Developing Biocar Research Program as Program Leader involving UofWaterloo, UofWindsor, UofQueens, Uof Toronto and Uof Guelph
- Alberta-SK- Manitoba Biofibres and Bioplastics Research Strategy Development Collaboration

Other Research Activities and Achievements, e.g., editorial positions, journal review duties, consultancies, participation on boards and commissions, etc.

- Referees for scholarly journals/publications, conference submission and proceedings.
- Reviewer of Technical papers for numerous journals for diverse journals.

Board Participation:

1) Member of Board of Directors Natural Composite Council, Canada.
2) Advisory Member of Stemergy Inc.
3) Canadian Standardization Association : Nanotechnology Steering Committee.
4) National Biofibre Initiative, Advisory Board Member
5) National Oilseed Bioproducts Council, Advisory Board Member
6) Flax 2015 Research and Commercialization initiative, Board Member
7) Member, Board of Directors, GreenCore Composites Inc.
8) Agriculture Canada, Strategic Research and Commercialization advisory
9) Industry Canada Bioproduct strategy advisory
10) Member of SOBIN, ELRIN.
11) Member BioAuto Council Strategic Commercialization Committee
12) Member Ontario Bio-Auto Council Research Committee
13) Member of Board of Natural Composite Council, Canada.
14) Advisory Board Member of Hempline Inc.
15) Canadian Standardization Association: Nanotechnology Steering Committee

Expert Opinion

1) Served as Expert in International Patent Dispute legal matters
2) Provided expert guidance in diverse industrial strategy initiative including Canadian Automotive Council, Canadian Agro fibre manufacturers, Natural composite manufacturers, Ministry of Economy and Trade, ON, Ministry of Agro Food , Ministry of Innovation, ON; Ministry of Industry, Ottawa.

Adjudicators of research grants, or of research proposals for external granting agencies
Reviewer of numerous granting organizations including USDA, DOE, NSERC, ESF.

Industrial Collaborators :

At present colloaborates with 31 industry partners.
Irving Canada, Abitibi Consolidated, Tembec, Kruger Inc., Noranda, CMD Casscade, Twin-Pac, Canada on utilization of waste streams from laminated packaging paper (unbleached and bleached Kraft and polymer coated Kraft paper production machine for packaging reuse or composite application; Marc Deroche, Trois-Rivieres Canada. This is an international company with excellent growth opportunity in value-added application of wood products in packaging industry.
Kimberly Clark; Use of peroxide bleached Kraft and exotic fiber sources for nonwoven food packaging application; this project orients toward replacement of cotton cellulose with environmentally friendly bleached pulp-based nonwoven products.
Monsanto Belgium; Warwick Corp. (UK), Elf -Autochem, France; Degussa, USA; US Borax. Ford Motors, Toyota USA, Magna, Intier, Decoma, Dofasco, Protectolyte Inc., Hempline, Nexwood, Xtendex, Atofina, Total-fina, Crook Composites, Hempline, Brite Manufacturing, Solutia Canada, Solutia Belgium.

Industrially Significant Research Program

Value-added Forest products

Twin-Pac, Canada on utilization of waste streams from laminated packaging paper (unbleached and bleached Kraft and polymer coated Kraft paper production machine for packaging reuse or composite application; Marc Deroche, Trois-Rivieres Canada. This is an international company with excellent growth opportunity in value-added application of wood products in packaging industry. Started in 1997.

Zeolite in Papermaking, Charger Inc: Use of zeolite in peroxide bleached Kraft and exotic fiber sources for nonwoven food packaging application; this project orients toward replacement of cotton cellulose with environmentally friendly bleached pulp-based nonwoven products.

Cargill Inc.: Use of Flax fiber in stiffness development for packaging papers and plastic composites; Use of monolayer coating technology to improve moisture barrier and printability in packaging application. Recent project- started in 1997.

Zeolite in retention and opacity improvement of TNT and Groundwood Pulp for printing grade paper in packaging and business application; Abitibi-Consolidated. August 1998.

Phosphonate in bleach stabilization; Solutia USA, July, 1998.

Effect of Bleach stabilizer in retention system of newsprint grade TMP; Kruger Inc., September, 1998.

DAF clarified Deinking Mill White water recirculation in wet end; Cascade CMD, Cap-de la Madeline., 1997-1998

Deinking Mill trial with Phosphonate; Donhue-Solutia, 1996

DTPNTA in Deinking; Monsanto Canada; July, 1996, 67 pages;

Comparison of DTPA and DTPMPA in deinking, Monsanto Canada, January 1997; 36 pages; Use of natural gas in infrared drying of paper, 156 pages, 1995

Stickies in repulping, screening and flotation processes; Avery Dennison Inc., 10 pages-, July 1997

Abitibi-Consolidated Inc. (Fort Frances): Worked in collaboration (Martin Fairbank, Jimmy Prasakis)

Important projects: Zeolite to improve value of bleached groundwood mechanical pulp . Project involved increasing retention of fines and filler by adding zeolite in the wet end; evaluating the performance of zeolite on paper opacity, surface smoothness, brightness. Effect of zeolite on waste water quality was also evaluated.

Abitibi-Consolidated Inc. (Beaupre): Thermo mechanical pulp stabilization for high brightness. Effect of phosphonate in oxidation stabilization during peroxide brightening.

Casscade CMD, Cap-de-la Madeline (Paul Derage): Use of deinking mill waste water for wet end and head-box dilution; project is still in progress. The process consists of using microparticle technology in dissolved air flotation to develop short cycle recirculation of white water. Surface treated porous microparticle has been developed in our laboratorv and used to reduce anionic trash and suspended solid during dissolved air flotation process.

Kruger Inc., Trois-Rivieres

This mill recently expanded their mechanical pulp usage in newsprint and high value grade from peroxide bleached TMP and groundwood. My research team is involved in developing new filler system for wet end addition which will decrease pitch depostion problem and improve printing quality by improving opacity and surface smoothness. Solutia Canada is also involved in this project as a financial partner.

Besides these projects I am also involved in various consulting projects in Asian and South American Mills. I am now developing new contacts in European mills to collaborate in value-grade paper projects.

Wood engineering and composites

Paper mill sludge in plastic composites; Domtar Inc, September, 1996, pp 42; M. M. Sain, J. Balatinecz

Medium Density Fiber Board (MDF) analysis and research potential; Norboard Canada, January, 1997 pp. 32 M. M. Sain and J. J. Balatinecz;

Evaluation of Fungal and termite resistance character of woodfiber composites; CRF Technologies; April, 1997, 40 pages;

Flax fiber in plastic composites; Cargill Inc., December 1996, pages 56; M. M. Sain and J. Balatinecz;

M. M. Sain, Decalcomanie Graham Inc., "Development of an test method for UV irradiated speed indicator in automotive application.

Technology Transfer

- "Preventing Yellowing of Fibre during Bleaching". A research project developed in collaboration with Monsanto (Solutia) is now transferred to manufacturing scale to 30 industries worldwide.
- Heat resistant woodfibre Platics Composite Manufacturing: Licenced to Boltwood Inc., NorthBay, ON.
- High Impact Therformed Natural Fibre Composites (in negotiation with Intier, Magna)
- High Stiffness NF-Polyester Composites (in negotiation with Decoma, Magna and Defasco)
- More than 25 technology transfers in last 10 years.

Participation in Industry Related R&D Activity and Technical Reports

40 technical reports were prepared from government and industrial projects. Most relevant industrial report is:"Use of DTPMP in bleach stabilization of mechanical pulp" Monsanto/Solutia Canada, 2000

"Paper Mill Sludge in Plastic Composites", Domtar Inc, 42 pages, M.M. Sain and J.J. Balatinecz, September 1997.

CONSULTANT

Served as consultant in technological and business development related to pulp and paper and natural composite products.

Consultant for wood fiber and polymer industries in the USA, Canada and Europe. Most significant consultancy project was on value added utilization of hardwood and softwood waste chips for construction and building part manufacturing. Project involved moisture control and fiber surface modification with reactive functionality in-situ during processing of wood fibre. The project was conducted by Andersen Corp. and Aspen Research Corp., St. Paul, USA.

Mohini Sain

GRADUATE and POSTGRADUATE

Direct supervision:

Degree	Name of Student	FT	PT
PhD	Maryam Edalatmanesh(Toronto)	FT	
PhD	Sally Krisgtin (Toronto)	FT	
PhD	Kevin Sung (Toronto)	FT	
PhD	Ryan Kim (Toronto)	FT	
PhD	Muhammad Pervaiz (Toronto)	FT	
PhD	Bei Wang (Toronto)	FT	
PhD	Arturo Rodridgue (Toronto)	FT	
PhD	Sreekumar Janardhan (Toronto)		PT
PhD	Smith Sundar (Toronto)	FT	
PhD	Abdul Awal (Toronto)	FT	
MScF	Chumbei Huang (Toronto)	FT	
MSc.E	Zhuang Wang (UNB)	FT	
MSc.	Leah Drapper (Toronto)	FT	
MSc.E	Alaah Saleh (Waterloo)	FT	
MSc.E	Sylvain Allete (Royal Millitary College)	FT	
MSc	Sadia Khan (Toronto)	FT	
MSc E	Philip Oakley (Toronto)	FT	
MscF	Swasati Ghosh Roy	FT	

Membership on graduate supervisory committees:

Degree	**Name of Student**	**FT**	**PT**
PhD	K. Sung (Mechanical)	FT	
PhD	Y. Zhang	FT	
PhD	Dragica Jermic	FT	
PhD	W. Gao	FT	
PhD	M. Carlos	FT	

Supervision of PDF and Research Associates

Name of PDF and Research Associates:

1. Dr. Tayebeh Behzad	Post Doctoral Fellow
2. Dr. Ayse Thompson	Post Doctoral Fellow
3. Dr. Sanchita Ghosh	Post Doctoral Fellow
4. Dr. Subrata Ghosh	Post Doctoral Fellow
5. Dr. Indranil Banik	Post Doctoral Fellow
6. Dr. Kuboko Hashimori	Post Doctoral Felllow (Mech. Eng.)
4. Dr. Robert Jeng	RA
5. Lynn He	Research Associate
6. Shiang Law	RA
7. Chumbei Huang	RA
8. Crystal Wu	Research Assistant

10. Haijoie Zhang	Research Assistant
12. Su Jun	Research Assistant
13. Hui Cai	Research Assistant
14. Aime Sylvain Fotso Talla	Research Assistant
15. Zack Husain	Research Assistant
16. Christi Chow	Research Assistant
17.Dr.Xin Guo Ge	Post Doctoral Fellow
18. Dr. Alexis.Jimenez	Post Doctoral Fellow
19. Dr. Qingping Guo	Post Doctorl fellow
20. Preeti Sharma	Research Assistnt
21. Dr. Ming Zheng	Post Doctoral Fellow
22. Dr. Vibha Tyagi	Research Assistant

Other factors:

Supervised several undergraduate students and school students during this time period. School Student supervision (Biocar Youth Outreach Project)

Supervised 5 High School students and delivered lectures in community

RESEARCH

Publications: Include only papers published during the previous calendar year. DO NOT include papers in preparation, submitted for review or in press. Please list in NSERC format and submit copies of all publications.

Mohini Sain

Refereed journal papers published (January - December 2008):

1. Kim, S.G., Park, C.B. and Sain, M., "Foamability of Thermoplastic Vulcanizats Blown With Various Physical Blowing Agents," *Journal of Cellular Plastics*, Vol. 44, No. 1, pp. 53-67, 2008.
2. Indranil Banik and Mohini M. Sain; Structure of Glycerol and Cellulose Fiber Modified Water-Blown Soy Polyol-Based Polyurethane Foams, Journal of Reinforced Plastics and Composites 2008 27: 1745-1758.
3. I. BANIK AND M. M. SAIN, 'WATER BLOWN SOY-POLYOL BASED POLYURETHANE FOAMS OF DIFFERENT RIGIDITIES', J. REINFORCED PLASTICS AND COMPOSITES, 27, 357 (2008).
4. Hubbe, M. A., Rojas, O. J., Lucia, L. A., and Sain, M. Cellulosic nanocomposites: A review, BioResources, 3(3), 929-980. (2008)
5. Ayse Alemdar, Mohini Sain, " Isolation and characterization of nanofibers from agricultural residue - Wheat straw and soy hulls ", Bioresource Technology, Vol. 99, Issue 6, PP 1664-1671, 2008.
6. Ayse Alemdar, Mohini Sain, " Biocomposites from wheat straw nanofibers : Morphology, thermal and mechanical properties ", Composites Science and Technology, Vol. 68, Issue 2, PP 557 - 565, 2008.
7. John Balatinecz, and Mohini Sain; Cars made of wood and hemp fibres? Why not? The Forestry Chronicle 83 pp 482-484, 2007 (late reporting in 2008- not reported last year)
8. Banik, I. Sain, M. Role of refined paper fiber on structure of water blown soy polyol based polyurethane foams; *Journal of Reinforced Plastics and Composites*, v 27, n 14, September, 2008, p 1515-1524
9. Alemdar, Ayse, Zhang, Hao; Sain, Mohini; Cescutti, Gabriel; Mussig, Jorg Determination of fiber size distributions of injection moulded polypropylene/natura fibers using X-ray microtomography *Advanced Engineering Materials*, v 10, n 1-2, February, 2008, p 126-130
10. Krigstin SG, Sain M; Determination of the mineral constituents of recycled paper mill sludge TAPPI JOURNAL Volume: 7 Issue: 6 Pages: 9-14 , 2008
11. Sodhi RNS, Sun L, Sain M, et al.; Analysis of Ink/Coating penetration on paper surfaces by time-of-flight secondary ion mass spectrometry (ToF-SIMS) in conjunction with principal component analysis (PCA) JOURNAL OF ADHESION Volume: 84 Issue:3 Pages: 277-292 : 2008
12. Dispersion of wood microfibers in a matrix of thermoplastic starch and starch-polylactic acid blend Author(s): Chakraborty A, Sain M, Kortschot M, et al. Source: JOURNAL OF BIOBASED MATERIALS AND BIOENERGY Volume: 1 Issue: 1 Pages: 71-77 2007 (late publication- not reported last year)
13. Mojumdar SC, Sain M, Prasad RC, et al. Selected thermoanalytical methods and their applications from medicine to construction ; JOURNAL OF THERMAL ANALYSIS AND CALORIMETRY Volume: 90 Issue: 3 Pages: 653-662 Published: DEC 2007 (late publication not reported last year)
14. Lee, Y.H., Sain, M., Kuboki, T., and Park, C.B., "Extrusion Foaming of Nano-Clay- Filled Wood Fiber Composites for Automotive Applications," SAE 2008 Transactions Journal of Materials & Manufacturing, Paper #2008-01-1264, 2008.
15. Krigstin, S.G., and Sain, M. The fractionation of dry recycled papermill sludge to higher value components. Journal of Biobased Materials and Bioenergy. v 1, n 3, p 315-322. 2008
16. Krigstin, S. and M. Sain. 2005. Recovery and utilization of fibre from recycled papermill sludge. Paper Technology, v 46, n 7, p37-42., 2008

Award:

1. Recepient of Grant Achiever Award 2008, Grant – Scotland Desi Achiever Recognition for Outstanding Community Service

Recognition:

Nobel Prize 2009 Chemistry Award Committee (Confidential) Invitation.

Refereed Proceedings (2013-14):

KC, B., Panthapulakkal, S., Agnelli, J.A.M., Tjong, J., Sain, M. "Development and process optimization of sisal/glass fiber reinforced polypropylene composite" The Composite and Advanced Material Expo, Orlando, FL, USA, October 13-16, 2014 (Oral, Submitted) [No. 290]

Sameni, J., Krigstin, S., and Sain, M. 13th International Symposium on Bioplastics, Biocomposites & Biorefining (ISBBB), Guelph, ON, Canada, May 19-24, 2014 (Oral Presentation) [No. 289]

KC, B., Panthapulakkal, S., Agnelli, J.A.M., Tjong, J., and Sain, M. "Application of computer simulation and Taguchi method to optimize differential shrinkage in bio-based hybrid polypropylene composites" 13th Internation Symposium on Bioplastics, Biocomposites & Biorefining, Guelph, ON, Canada, May 19-24, 2014 (Poster) [No. 288]

Ferhan, M., Yan, N., and Sain, M. "Bio-depolymerization of bark and integration between laccases Vs bark polyaromatics/polyphenols characterize by GC/MS/MS" 13th International Symposium on Bioplastics, Biocomposites & Biorefining (ISBBB), Guelph, ON, Canada, May 19-24, 2014 (Poster) [No. 287]

Ding, W.D., Kuo, P.Y., Park, C.B., and Sain, M. "Morphology and Mechanical Properties of Polylactic AcidCellulose Nanofiber Composite Foams" Society of Plastics Engineers, 72th Annual Technical Conference, Technical Paper # 1886734, Las Vegas, Nevada, April 28-30, 2014 [No. 286

Ding, W.D., Kuo, P.Y., Kuboki, T., Park, C.B., amd Sain, M. "Foaming of Cellulose Fiber Reinforced Polylactic Acid Composites: The Effect of Cellulose Fiber type and Content" Society of Plastics Engineers, 71th Annual Technical Conference, Technical Paper # 1591117, Cincinnati, Ohio, April 22-24, 2013 [No. 285]

KC, B., Sain, M., and Tjong, J. "Rapid Prototype Development of Bio-composite Engine Beauty Cover" Meeting: Society of Plastic Engineer Automotive Composite Conference & Exhibition (ACCE), Novi, Michigan, USA, September 11-13, 2013 (Poster) [No. 284]

KC, B., Tjong, J., Bernard, E., and Sain, M. "Odor-free and glossy biocomposite structural part using Rapid Heat Cycle Molding (RCHM) Technology" Meeting: Auto21 Annual Conference, Toronto, Canada, May 21-23, 2013 (Oral) [No. 283]

KC, B., Tjong, J. Sain, M., Doug, C., and Bernard, E. "Injection molding challenges with biocomposite based on computer simulations" Meeting: Canadian Innovation Day, Ford Product Development Centre Showroom, Dearborn, USA, March 1st, 2013 (Oral & poster) [No. 282]

Gu, R., Sui, J., and Sain, M. "Evaluations of moisture uptake and mechanical properties of starch-lignocomposites" BioNib 2nd annual meeting, Guelph, Canada, November 22, 2013 [No. 281]

Gu, R., Vittekova, M., and Sain, M. "Thermal and weather durability of lignocomposites" BioNib 2nd annual meeting, Guelph, Canada, November 22, 2013 [No. 280]

Gu, R. and Sain, M. "Green nanotechnology in nanofiber" 6th International WPC Symposium, Biarritz, France, September 23-24, 2013 [No. 279]

Gu, R. and Sain, M. "Carbon fiber reinforced composites for automotive" 19th International conference on composite materials, Montreal, Canada, July 28-August 2, 2013 [No. 278]

Gu, R. and Sain, M. "Low Carbon Footprint Construction-From Plant Carbon to Green Building" Canada-India Workshop on Building Healthy Communities, Nagpur, India. February 21-22, 2013 [No. 277]

Ding, W.D., Park, C.B., and Sain, M. "Mechanical properties of cellulose nanofiber reinforced polylactic acid composites and their foams" 4th BIOFOAMS (international), p.142, Toronto, Canada, August 27-29, 2013 [No. 276]

Chang, L.C, Hussain, S., Sain, M., and Kortschot, M.T. "Effect of reactive amine catalysts on cell structure and mechanical properties of fibre-reinforced soy-based polyurethane spray foam" Advancements in Fiber-Polymer Composites: Wood Fiber, Natural Fibers and Nanocellulose Conference, Hilton Milwaukee City Center, Wisconsin, USA, 2013 [No. 275]

Chang, L.C., Sain, M, Kortschot, M.T. "The effect of mixing conditions on the morphology and performance of fibre reinforced biofoams" 4th International Conference on Biofoams, Great Hall Hart House, Toronto, Canada, 2013 [No. 274]

Sameni, J., Xu, J., Krigstin, S., and Sain, M. "Bio-based pots with controlled degradation feature for horticultural industry" BioNIB 2nd Annual Meeting, Arboretum Center, University of Guelph, Poster Presentation "won the second prize", 2013 [No. 273]

Sameni, J., Krigstin, S., and Sain, M. "Structural, and thermal characterization of commercial lignin for potentially value added industrial application" BioNIB 1st Annual Meeting, Arboretum Center, University of Guelph, Poster Presentation, 2013 [No. 272]

Krigstin, S., Sameni, J., and Sain, M. "Hydrophobic advancements in pulp molded products" IMFAa´s 16th International Molded Fiber Packaging Seminar, Toronto, April 24-25, 2013 [No. 271]

Phillips, S., Kuo, P.Y., Demaria, C., Lessard, L, Yan, N. Huberta, P., and Sain, M. "Development of Multi-Scale Biocomposites from Flax, Nanocellulose and Epoxy by Resin Infusion" NIPMMP conference in Montreal. June 11-12, 2013 [No. 270]

Kuo, P. Y., Sain, M., and Yan, N. "Synthesis and Characterization of a Novel Bio-based Epoxy Resin from Bark Extractive" Oral presented at BIOPOL2013 Conference, Rome, Italy, October 1-3, 2013 [No. 269]

Ghosh, S.B., Bandyopadhyay-Ghosh, S., and Sain, M. "Microstructural development of novel polysaccharide derived hybrid biocomposite foam and evaluation of cytotoxicity" 100th Indian Science Congress, Kolkata, India, January, 2013 (Poster Presentation) [No. 268]

Total number of conference proceedings publications up to date: 290 (title on request)

Other publications: Scholarly Addresses (Symposia, Conferences, Workshops)

INVITED TALKS: (Jan – Dec 2008)

65 invited talks in Canada, USA, France, Japan, Brazil, India, Sweden.

INVENTION DISCLOSURES:

1. M. Sain, S. Law, Manufacturing Process for Ligno-cellulosic Fibre Filled Recyclable Composite Materials for High Performance--Further Improvement, Ref # 10001455, 15 March 2006
2. M. Sain, Machine Operation Layout for Hybrid Glass and Lignocellulosic Fiber-Filled Recyclable Composite Products Manufacturing, Ref # 10001473, 26 May 2006
3. M. Sain, Solid Phase Dispersion and Processing of Micro-and Nano-Cellulosic Fibres in Plastic Phase to Manufacture Bio-Nanocomposite Products of Commercial Interest, Re #10001474, 26 May 2006
4. M. Sain, S. Krigstin, Beneficial Utilization of Sludge Residue Prepared by a Patented Kinetic Drying System for Use in Engineered Bio-Materials, Ref # 10001507, 29 August 2006
5. M. Sain, Starch-based Polymer Conversion by the Filamentous Fungus Ophiostoma ulmi: UT-Thermoplastic Starch--Further Improvement, Ref # 10001556, 17 January 2007
6. M. Sain, Dispersion of Cellulose Nanofiber in Biopolymer Based Nanocomposites in Solid Phase by Melt-Mixing, Ref # 10001779, 23 May 2008
7. M. Sain, R. Jeng, Production and Processing of Fungal Protein Obtained from Isolates of Ophiostoma ulmi sensu lato as Protein Based Film or Varnish or Paint or Other Application, Ref # 10001789, 10 June 2008
8. M. Sain, T. Behzad, Process to Manufacture Moldable Green Plastics and Micro-and Bio-nanomaterials, Ref # 10001790, 16 June 2008

9. M. Sain, R. Jeng, Martin Hubes, Use of Fungal Protein Obtained from Isolates of Ophiostoma ulmi sensu lato as Protein Based Film or Coating Application, Ref # 10001826, 25 August 2008

10. M. Sain, Natural Fibre Reinforced Engineered Plastics, Ref # 10001863, 11 November 2008

11.M. Sain, S. Law, Lowering Melting Point of Engineering Plastics: Polyester and Nylon During Melt Processing, Ref # 10001864, 11 November, 2008

12.M. Sain, Bio-Fibre Reinforced Polylactic Acid, Ref # 10001994, 2 November 2009

13.M. Sain, S. Law, Method of Manufacturing - Defibrillated Fibre Pellets, Ref # 10002229, 4 March 2011

14.M. Sain, S. Law, Method of Compounding Pulp Fibre Using Twin Screw Extruder, Ref # 10002272, 3 May 2011

15.M. Sain, S. Law, Preparation of Carbon Fibre and Bio-Fibre Hybrid Composite Compounds, Ref # 10002454, 1 August 2012

16. M. Sain, H. Hajiha, High impact hybrid hemp-GF-PP biocomposite, Ref # 10002603, 14 May 2013

17. M. Sain, S. Janaradhan, Isolation of Cellulose Nano-fibres from Natural fibres: A novel energy efficient bio-mechanical process, Ref # 10002713, 24 February 2014

18. M. Sain, R. Jeng, Cellulose Nanofibre-Based Coating, Laquers, Sizing Agent & Varnishes for Technical Applications, Ref # 10002724, 3 March 2014

19. M. Sain, A. Beh, Reclaimed and Recycled Carbon fibres as a Continuous Feed for Lightweight Composites, Date of submission - 30 January 2015

20. M. Sain, Bio-nanocomposite Starch-based polymer conversion by the filamentous fungus Ophiostoma ulmi: UTThermoplastic Starch; June 2008

21. M. Sain and R. Jeng ; Protein from Fungus for Automotive Coverstock, September 2008

OTHER RESEARCH CONTRIBUTIONS: Funded Grants and Contracts 2008

Present Funded Grants and Contracts as Principle Investigator

Infrastructure Fund

Sponsor	Title	Duration	Amount($)	Year of tenure
ORF RE 07	Clean Manufacturing and Nano Engineering of Sustainable Materials	5 years	1,990,822	2015 - 2020
Natural Sciences and Engineering Research Council of Canada (NSERC), Discovery	Fundamentals of cellulose nanofibres and nano-biocomposites, Grant	6 years	246,000	2012 - 2018
Natural Sciences and Engineering Research Council of Canada (NSERC)	Design and manufacturing of direct micro/long fibre lightweight composites, Grant	5 years	1,691,700	2013 - 2018
ISTP - CRD, Contract	ISTPCanada	2 years	131,250	2013 - 2015
ISTPCanada	ISTP - Bayview(NSERC), Grant	2 years	87,500	2013 - 2014
University of Toronto	University of Toronto Award in Natural Sciences & Engineering, Grant	4 months	4,875	2015/5 - 2015/9
ISTPCanada	ISTP Canada-Microfiber-	2 years	200,000	2013 - 2015

	based innovative structural autoparts, Contract			
Natural Sciences and Engineering Research Council of Canada (NSERC)	Development of fibre reinforced biofoams for automotive parts, Grant	6 years	232,667	2010 - 2016
Ontario Research Fund (ORF)	Agri residues conversion for Bioproducts, Grant	6 years	10,796,563	2011 - 2016
Networks of Centres of Excellence (NCE)	Prototyping of automotive parts with flexible sensor device, Grant	3 years	74,927	2012 - 2015
Natural Sciences and Engineering Research Council of Canada(NSERC)	Lightweight Plastic Manufacturing, Grant	4 years	592,500	2010-2014
Ontario Research Fund (ORF)	Bark Biorefinery, Grant	4 years	672000	2009 - 2013
Natural Sciences and Engineering Research Council of Canada (NSERC)	Polyurethane spray foam with green fibre for building insulation, Grant	4 years	200,000	2010 - 2014

CREATIVE PROFESSIONAL ACTIVITIES

Organization of symposia, conferences or workshops:

1) Finland- Ministry of Research and Innovation (MRI) Workshop on Ontario Biomaterials Prospect; University of Toronto, October, 2008

2) University Of Toronto – CTBA France Collaborative Workshop, Biomaterials; May 2008

3) WPC International Conf, Toronto, May 2008

Twenty additional Ministry of Research and Innovation, OMAFA, Industry Canada, MNR ON workshop for the Centre had been conducted in this year.

National/international research cooperation:

1) Involved in nation-wide networking: Auto 21st Century NCE program (involved 8 participants research investigators from five Academic and research Institutions in Canada); worked as a Team Leader in Natural Fiber Project development under Composite manufacturing and Processing Theme.

2) Developing international research program in Biocomposite with Finland, Sweden, France, Brazil, and Germany.

3) Project Leader for Network of Centre of Excellence; Biomaterials

4) Integrated program development in Ontario Biotechnology Initiative directed by Ministry of Opportunity and Innovation under BioAuto Council, Ontario Jetro, Japan

5) Developing Biocar Research Program as Program Leader involving UofWaterloo, UofWindsor, UofQueens, Uof Toronto and Uof Guelph

6) Alberta-SK- Manitoba Biofibres and Bioplastics Research Strategy Development

Collaboration :

Co-investigator on funded research project:

1. NSERC-CRD Bioplastics from pulp and paper mill sludge: P.I. G. Allen (50,000/yr)(UofT)
2. OMAF- Bioproduct Research Program: P.I. Larry Ericson: ($138,000/yr)(Guelph)
3. Paper Mill Sludge, CRD Project with Ahmed Kouba, University of Quebec (40K/y)

Other Research Activities and Achievements, e.g., editorial positions, journal review duties, consultancies, participation on boards and commissions, etc.

Referees for scholarly journals/publications, conference submission and proceedings.

EDITORIAL POSITIONS:

1) Associate Editor: Journal of Biomaterials and Bioenergy
2) Editorial Board Member: Journal of Bioresources Technology

SEVEN TECHNICAL PAPERS WERE REVIEWED FOR DIVERSE JOURNALS: Average reviewing service: Two papers /month

Journal of Applied Polymer Science

J. of Bioresource Technology:

J. Composites; Composite Science and Technology

Polymer and Polymer Composite Technology. Pulp and Paper Canada

Biomacromolecules and 7 others.

BOARD PARTICIPATION:

1. Member of Board of Directors Natural Composite Council, Canada.
2. Advisory Member of Stemergy Inc.
3. Canadian Standardization Association : Nanotechnology Steering Committee.
4. National Biofibre Initiative, Advisory Board Member
5. National Oilseed Bioproducts Council, Advisory Board Member
6. Flax 2015 Research and Commercialization initiative, Board Member
7. Member, Board of Directors, GreenCore Composites Inc.
8. Agriculture Canada, Strategic Research and Commercialization advisory
9. Industry Canada Bioproduct strategy advisory
10. Member of SOBIN, ELRIN.
11. Member BioAuto Council Strategic Commercialization Committee
12. Member Ontario Bio-Auto Council Research Committee

EXPERT OPINION

1) Provided expert guidance in diverse industrial strategy initiative including US, Europe, Japan, Canadian Automotive Council, Canadian Agro fibre manufacturers, Natural composite manufacturers, Ministry of Economy and Trade, ON, Ministry of Agro Food , Ministry of Innovation, ON; Ministry of Industry, Ottawa.
2) Evaluators for International Proposals in UK, Finland, Sweden, Estonia

CONSULTANT:

Served as a consultant in technological and business development related to biorefinery, industrial bioproducts, bioplastics, pulp and paper and natural composite products.

ADMINISTRATION: (Jan - December 2006)

Faculty and University Committees (standing and ad hoc)

Name of Committee	Chair	Duration
PhD Exam committee (3)	yes	2004-
Faculty Advisory committee	member	2008-
Promotion Committee (reading)	member	2006-
UofT Faculty Association Council	member	2005-2008

University Administration

Chair PhD Defence Committee:
Chair: PhD senate defence for other faculties. – Two
Chair: Departmental Comprehensive and PhD – One
School, Community and Other

School:

1) Board Member of School Academic Advisory Committee (Bishop Allen Academy)

Other University:

1) Academic Search Committee- Premier's Chair at University of Guelph

Organization and Community:

2) Ontario Bioproduct Strategic Council
3) Ontario BioAuto Council – Research and Commercialization committees
4) Alberta – Oilseed Bioproduct Strategic Committee
5) Saskatoon Biofibre National Committee
6) Manitoba Biorproduct Strategic Council
7) Flax 2015 Board of Advosors
8) Industry Canada Bioproduct Strategic Development and Green Chemistry Section
9) Canadian Plastics Association Bioplastics Committee
10) Canadian Natural Composite Council, Advisory Committee
11) ABIP Funding Review Panel Member.

Centre Administration

Director: Centre of Biocomposites and Biomaterials Processing, Faculty of Forestry
OTHER CONTRIBUTIONS NOT REPORTED ELSEWHERE:
Members serving as external examiners for doctoral theses at another university, submission of grant applications to external funding agencies, members serving on national accreditation committees, members conducting appraisals of faculty members at other universities for promotion reviews, serving on executives of national boards, scholarly or professional organizations, etc.

ADJUDICATORS OF RESEARCH GRANTS, OR OF RESEARCH PROPOSALS FOR EXTERNAL GRANTING AGENCIES.

Reviewed several proposals:

- European Science Foundation
- NSERC (Federal) and OCE,
- Ontario Research and Development Challenge Fund (Ontario),
- Canada Research Chair,
- ABIP Bioproducts Funding
- Alberta Government
- Finnish Academy of Science
- Estonia Academy of Science
- Norway Technical Academy

Media Interviews & Publications: (2008)
Eight interviews with different public organization, national newspapers and other media. More than 3000 Google Citations for the Year 2008
Selective Examples Significant Global Citations for the year 2008

1. Mohini Sain | Experience Research

29 Jul 2008 ... GreenCore completes successful financing round - Dec 16, 2008 - 3:42 pm ... Mohini Sain, a U of T professor in Forestry and Chemical ... www.research.utoronto.ca/tag/mohini-sain/ - 13k - Cached - Similar pages

2. University of Toronto professor turns hemp into ...(If Mohini ...

If Mohini Sain has his way cars of the future may be fitted with toug. ... 25 Convertible Notes Due 2008 409 1NPS Pharmaceuticals Commences Tender Offer for ...
news.bio-medicine.org/biology-news-2/University-of-Toronto-professor-turns-hemp-into- auto-parts-3617-1/ - 26k - Cached - Similar pages

3. Chem Prof Mohini Sain - In the News

30 Jun 2007 ... Time: Update on the 2008 Undergraduate Nanotechnology Conference ... Chemical Engineering and Applied Chemistry Professor Mohini Sain, ...
www.engineering.utoronto.ca/news/070320072.htm - 13k - Cached - Similar pages

4. BioAuto, BioCar, Biobased materials, renewable, plastics ...

A renewable future with biodiesel and glycerin. June 24, 2008 More > ... Mohini Sain's Presentation at the BioPlastics 101 Workshop on April 2, 2008 ... www.bioautocouncil.com/resources/ - 13k - Cached - Similar pages
www.industrymailout.com/Industry/View.aspx?id=69511&p=5f43 - 20k - Cached - Similar pages
Wood-polymers composites Kristiina Oksman Niska, Mohini Sain ...
Wood-polymers composites - Kristiina Oksman Niska, Mohini Sain ... Publication Date : 06/24/2008 ... M SAIN and M PERVAIZ, University of Toronto, Canada ...
www.keenzo.com/showproduct.asp?ID=3199566 - 91k - Cached - Similar pages

5. Cellulose Nanocomposites: Processing, Characterization and ...

Cellulose Nanocomposites: Processing, Characterization and Properties (Hardcover). by Kristiina Oksman (Editor), Mohini Sain (Editor) ... www.amazon.ca/Cellulose-Nanocomposites-Processing-Characterization- Properties/dp/0841239800 - 131k - Cached - Similar pages

6. Zerofootprint :: Events :: Environment Seminar Series with ...

Mohini Sain, Professor, Faculty of Forestry and Director, ... Professor Mohini Sain will give a

talk titled “Bio-crude to manufacturing: from plants and ...
earthhour.zerofootprint.net/green-world/events/1279 - 13k - Cached - Similar pages
7. Scribbly Gum Books: Kristiina Oksman Niska and Mohini Sain - Wood ...
Kristiina Oksman Niska and Mohini Sain. Book of the Woodhead Publishing in Materials series ... Publication Date: 8/1/2008; Publisher Imprint: CRC Press ...
www.scribblygumbooks.com.au/9781420076110.html - 8k - Cached - Similar pages
8. Wood-polymers Composites, Kristiina Oksman / Mohini Sain- Studia ...
av Kristiina Oksman / Mohini Sain ... Forlag: CRC Press Inc Utgitt: 2008-07-18. Innbinding: Hardback Sider: 384. Språk: English ISBN: 1420076116 ... www.studia.no/uib/vare.php?ean=9781420076110 - 30k - Cached - Similar pages
Ministry of Research and Innovation
Dr. Mohini Sain demonstrates a newly discovered bioplastic made from corn starch. ... Queen's Printer for Ontario, 2008. Last Modified: October 27, 2008.
www.mri.gov.on.ca/english/ontario_innovates/stories/orf_biocar.asp - 18k - Cached - Similar pages
9. Department Seminars | News and Events | Chemical Engineering
Oct. 22, 2008, Mohini Sain University of Toronto Toronto, ON, "An Overview of Cellulose Nanotechnology - Reach and Applications", DWE 2529 ...
iseb-web.org/news_events/seminars_dept.html - 17k - Cached - Similar pages
10. IMC-India Calling 2008
Mohini Sain University of Toronto and University of Guelph. Nazir Kherani University of Toronto. Mr Mark Romoff president and CEO, Ontario Centres of ... www.imcnet.org/indiacalling_08/speakers.html - Similar pages
February 6, 2008. Speaker: Dr. Mohini Sain • How does Alberta position itself to participate in the global bioeconomy, estimated to be valued at $500 ...
11.Houses Made Of Hemp Could Help Combat Climate Change 17, *2008* — Houses made of hemp, timber or straw could help combat climate **...** 2003) — If *Mohini Sain* has his way, cars of the future may be fitted with **...** *www.sciencedaily.com/releases/2008/09/080916154724.htm - 47k* - Cached - Similar pages
12. Edge - Summer *2008* RESEARCH AND INNOVATION AT THE UNIVERSITY OF TORONTO · SUMMER *2008* · VOL.10, ... *Mohini Sain*, a U of T professor in Forestry and Chemical Engineering and
www.research.utoronto.ca/edge/summer2008/1.html - 17k - Cached - Similar pages
13. [PDF] Monday morning, May 12, 2008 File Format: PDF/Adobe Acrobat - View as HTML 12 May 2008 ... Mohini Sain, University of Toronto, ON, Canada - Conference Co-Chair ... Monday afternoon, May 12, 2008 Concurrent Sessions ..www.biocomposites-toronto.com/documents/final2008program.pdf - Similar pages
14. [PDF] Page 1 Media Release Communiqué www.auto21.ca AUTO21 and partners ... File Format: PDF/Adobe Acrobat - View as HTML 3 Jun 2008 ... AUTO21 Project Funding 2008-2010. AUTO21 and its partners will support the following 54 projects ... Dr. Mohini Sain, University of Toronto ...
auto21.ca/uploads/media/AUTO21%20Proj%20Ann%202008%20Release%20ENG%20... - Similar pages
15. Biopolymers Symposium 2008 - Workshops - powered by RegOnline 6 Oct 2008 ... Biopolymers Symposium 2008. Rosemont, IL Monday, October 06, 2008 ... Your workshop leader: Mohini M Sain, Professor and Director, ... www.regonline.com/builder/site/tab3.aspx?EventID=198797 - 67k - Cached - Similar pages
16. ICBC 2008 A. Vadivel Murugan (USA), Mohini Sain (Canada). S.N.Sapuan(Malaysia), Fahrettin Yakuphanoglu (Turkey). Said Djadoun (France), Tony McNally (UK) ...
www.polymer.in/icbc2008/speakers.html - 27k - Cached - Similar pages
17. BioscienceWorld By Mohini Sain, PhD, Robert Jeng, Bradley Saville, PhD, Chun Bei Huang and .... Mohini

Sain, Robert Jeng, and Martin Hubbes are with the University of ...
www.bioscienceworld.ca/ThermoplasticStarch - 35k - Cached - Similar pages
19. Media Publications (More than 1000 articles) Radio Interviews (More than 20 worldwide)
20. BBC-London- Hemp based Automotive, BBC London 94.9, October 12, 2003
21. CBS- USA
22. South African Broadcasting Centre, SAfm Producer , October 16, 2003, build cars with natural fibre composite materials
23. Australian Broadcasting Centre
24. Irish Radio Station
25. Radio Canada International (March 19, 2004)
26. CBC News: CBC News: Scientists studying how to grow cars -
... "This nanobiofibre technology at best could be comparable, or in some cases, it might exceed the strength properties of steel," said Mohini Sain, a professor
www.cbc.ca/stories/2003/09/09/plant_steel030909

Televised media:

Global TV: Moneyline with Dr. sain
Business Television: with Gord Surgeneor on Dr. Sain's research

Newspaper Artilces

More than 20 newspaper articles globally including leading Canadian Newspapers (Ottawa Citizen, Toronto Star, Global Mail, La Press)
eng - RECENTLY IN THE NEWS -
... Professor Mohini Sain's work creating biocomposites from processed plant fibres was also featured in the Spring 2004 issue of Edge. ...
www.engineering.utoronto.ca/ userfiles/HTML/nts_1_967_1.html
Vienna-Online Das „Bio-Auto" erscheint am Horizont
Welcome to EDGE Magazine : Research and Discovery at the ... - [Traduire cette page] IF MOHINI SAIN HAD HIS WAY, CARS OF THE FUTURE MAY BE FITTED WITH TOUGH, durable and completely biodegradable bumpers made of hemp. ... www.research.utoronto.ca/ edge/spring2004/intheworks/sain.html - 12k - 19 sep 2004
NSERC - Web Features - Converting Crops Into Cars - [Traduire cette page]
... an industry partnership between the Ford Motor Company and the University of Toronto's Dr. Mohini Sain and his collaborators are resurrecting Ford's dream. ... www.nserc.ca/news/features/sain_e.htm
SchoolFinder.com - [Traduire cette page] September 30, 2003 - If Mohini Sain has his way, cars of the future may be fitted with tough, durable and completely biodegradable bumpers made of hemp. ... www.schoolfinder.com/news/ pressrls.asp? IPTEKnet . Mohini Sain profesor mengungkapkan riset terkini tentang tanaman 'hemp' -salah satu rumpun keluarga tanaman ganja / cannabis- yang berhasil diproses menjadi ... www.iptek.net.id/ind/berita/berita_lama_idx.php? - 19 sep 2004
University of Toronto professor turns hemp into auto parts - If Mohini Sain has his way, cars of the future may be fitted with tough, durable and completely biodegradable bumpers made of hemp. ...
www.scienceblog.com/community/ older/2003/B/20037216.html
News@UofT -- Professor turns hemp into auto parts -- September 29 ...
If Mohini Sain has his way, cars of the future may be fitted with tough, durable and completely biodegradable bumpers made of hemp. ... www.news.utoronto.ca/bin5/030929b.asp

Mohini Sain

Forestry || Forestry news articles, events and discovery archive - [Traduire cette page]
... Parts September 30, 2003: If **Mohini Sain** has his way, cars of the future may be fitted with tough, durable and completely biodegradable bumpers made of hemp. **...** www.brightsurf.com/isearch/index.php? Action=search&s=Forestry - - 19 Sep 2004

La lettre en PRIM
... automobiles. Pr **Mohini Sain** Faculty of Forestry/Department of Chemical Engineering and Applied Chemistry m.**sain**@utoronto.ca. Sources **...**
www.prim.asso.fr/media/lett_actu.htm - Un prix
national Synergie pour l'UQTR
... Devant les succès remportés par le groupe de recherche, le professeur **Mohini Sain**, Associé d'abord au projet comme professionnel de recherche à l'UQTR ...
www.uquebec.ca/bp/actualite/1221/TR1412.shtml - 11k - 20 Sep 2004

Converting crops into cars -
... An industry partnership between the Ford Motor Company and the University of Toronto's Dr. Mohini Sain and his collaborators are resurrecting Ford's dream. ...
www.scienceinafrica.co.za/2003/october/ford.htm

The Scientist: Frontlines | Harvesting Car Bodies and Airplane...
... But if the University of Toronto's Mohini Sain is right, in two to five years they'll also be growing material for auto bodies, airplane wings, football helmets ... www.the-scientist.com/yr2003/oct/upfront1_031020.html

cannabisnews.com: University of Toronto Prof Makes Hemp Auto Parts -
... Cormier, The Varsity - U. of Toronto Source: Peak hemp amid the clutter of textbooks, journals, papers and reams of notes in the office of Mohini Sain sits a ... www.cannabisnews.com/news/thread17777.shtml

ISA | from plant to bumper, professor creates green auto parts -
... New biocomposites created from processed plant fibers may soon come to a car near you, according to research from Mohini Sain, a professor in the University of ... www.isa.org/.../ContentManagement/ContentDisplay.cfm

e.Peak (10/11/2003) news: <I>tech :< /I> University of Toronto prof...
... Amid the clutter of textbooks, journals, papers and reams of notes in the office of Mohini Sain sits a car door, a bus seat, an instrument panel, a deck plank...
www.peak.sfu.ca/the-peak/2003-3/issue11/ne-hemp.html

From cannabis to carburetor U of T prof makes autoparts from hemp -
Amid the clutter of textbooks, journals, papers and reams of notes in the office of Dr. Mohini Sain sit a car door, a bus seat, an instrument panel, a deck ... www.cannabisclub.ca/The_Varsity_103003.html

From cannabis to carburetor U of T prof makes autoparts from hemp -
Amid the clutter of textbooks, journals, papers and reams of notes in the office of Dr. Mohini Sain sit a car door, a bus seat, an instrument panel, a deck ... www.cannabisclub.ca/The_Varsity_103003.html

Bioednet Oct 6 -... Professor turns hemp into auto parts September 29, 2003 Toronto University If Mohini Sain has his way; cars of the future may be fitted with tough, durable and...
131.104.74.73/archives/bioednet/ 2003/10-2003/bioednet_oct_6.htm

ScienceDaily -- Browse Topics: Health/Specific_Substances/Cannabis -
... Parts (October 1, 2003) — If Mohini Sain has his way, cars of the future may be fitted with tough, durable and completely biodegradable bumpers made of hemp. ... www.sciencedaily.com/directory/Health/Specific_Substances/Cannabis - 37k - 20 sep 2004 - En cache - Pages similaires

Nimbin HEMP Embassy -

... Lead, Auto 21; Geof Kime, Hempline; Dr. Mohini Sain, Professor & Research Scientist, Bio Plastics and Bio Fibres, University of Toronto; Dr. Caroline Baillie ... www.hempembassy.net/hempe/wnews39.html
Papier - Canadian Pulp and Paper Network for Innovation in...
... Sylvain Robert, Université du Québec à Trois-Rivières. Mohini Sain, University of Toronto. Martha Salcudean, University of British Columbia. ...
www.papiernet.ca/about-university.cfm
The Hempire - University of Toronto Prof Makes Hemp Auto Parts -
... Cormier, The Varsity - U. of Toronto, Peak - 12 Nov, 03 Amid the clutter of textbooks, journals, papers and reams of notes in the office of Mohini Sain sits a ...
www.thehempire.com/pm/comments/1473_0_1_0_C
Global Hemp: Portal to the industrial hemp community -
... Turns hemp into auto parts If Mohini Sain has his way, cars of the future may be fitted with tough, durable and completely biodegradable bumpers made of hemp. ...
www.globalhemp.com/News/2003/September/index2.html -
Zderzak z Świętego Ziela
... konopii. Mohini Sain, profesor University of Toronto, opracował biokompozyty z przetworzonych włókien roślinnych. Głównym ... hyperreal.info/drugs/go.to/art/3732
Profesor iz Univerze v Torontu spreminja industrijsko konopljo v ...
... Toronto, Kanada Če bo Mohini Sain dosegel svoje, potem bodo avtomobili prihodnosti morda opremljeni z močnimi, trpežnimi in popolnoma bio razgradljivimi ...
www.konoplja.org/Novice/Tuje/Profesor_konoplja_deli.htm
High on hemp -
... But two Canadian researchers, Mohini Sain and Bhuwan Prasad of the University of Toronto, have discovered that heating hemp to more than 180 degrees leaches ...
www.globalhemp.com/News/2003/October/high_on_hemp.html
themuse.ca - Memorial University's Student Newspaper Online -
... From cannabis to carburetor. TORONTO (CUP) – Amid the clutter of textbooks, journals, papers, and reams of notes in the office of Mohini Sain sits a car door ...
www.mun.ca/muse/archive/Volume54/Issue09/science/
Growing Cars from Hemp -
... This nanobiofibre technology at best could be comparable, or in some cases, it might exceed the strength properties of steel," said Mohini Sain, a professor ... www.hemp.co.uk/html/sciencar.html Uutisia
... Toronton yliopiston professori Mohini Sain on suunnitellut hampusta enemmän asioita kuin yleensä kuvitellaankaan. Hänen toimistossaan ... www.sky.org/ajankohtaista/2003/news.html
EDGE Magazine: Zoom - Spring 2002 -The U of T team is led by MOHINI SAIN of forestry. Two members of U of T's Faculty of Arts and Science won Governor General's Literary Awards in November. ...
www.research.utoronto.ca/edge/spring2002/zoom.html - 15k compass -
... RESEARCH UPDATE Harvesting Car Bodies and Airplane Wings These days, farmers grow mainly food, but if the University of Toronto's Mohini Sain is right, in two ...
www.wark.csiro.au/library/Archive/compass2003_21.html
UKWild News the latest global, eco news, free eco news feeds...
... by admin - 1 October, 2003 If Mohini Sain has his way, cars of the future may be fitted with tough, durable and completely biodegradable bumpers made of hemp. ...

www.ukwildnews.co.uk/cgi-bin/ wildnews/print.pl?article
토론토대학 (University of Toronto) Mohini Sain 교수 연구진에...
www.dltbio.com/spboard/board.cgi? Itar 3
The Gateway | Tuesday, 4 November, 2003 | Volume XCIII Issue 17
From cannabis to carburetors, bumpers, and bus seats University of Toronto engineering professor Dr Mohini Sain makes auto parts from hemp Zoe Cormier TORONTO ...
www.gateway.ualberta.ca/view.php
Cannabis news - marijuana, hemp, and cannabis news
... Parts -- September 29, 2003 If Mohini Sain has his way, cars of the future may be fitted with tough, durable and completely biodegradable bumpers made of hemp. ... www.babieca.com/cgi-bin/engine/smartsearch. cgi
Coolest auto parts sites jobs newest auto parts sites jobs...
... University Of Toronto Professor Turns Hemp into Auto Parts. If Mohini Sain has his way, cars of the future may be fitted ... More Listings. ... www.justwebtraffic.com/cgi-bin/jwt/ smartsearch.cgi?
Globe and Mail: January 5, 2006
Auto Innovation Winter 2006
Eight interviews with different public organization, national newspapers and other media. More than 1000 Google Citations for the Year 2007
Selective Examples Significant Global Citations for the year 2007
Ministère de la Recherche et de l'InnovationDr Mohini Sain fait la démonstration d'un bioplastique à base de fécule de maïs. Dr Mohini Sain fait la ... Imprimeur de la Reine pour l'Ontario, 2007 ...
www.mri.gov.on.ca/french/programs/orf/stories/orf_biocar.asp - 15k - En cache - Pages similaires
Ministère de la Recherche et de l'Innovation8 mar 2007 ... Les chercheurs, dirigés par le Dr Mohini Sain, travaillent à réduire les coûts de production, ... Imprimeur de la Reine pour l'Ontario, 2007 ...
www.mri.gov.on.ca/french/news/Agri030807_bd1.asp - 16k - En cache - Pages similaires
A Chem Prof Mohini Sain - In the News- [Traduire cette page] Chemical Engineering and Applied Chemistry Professor Mohini Sain, the Toronto Star article "GREEN SOLUTIONS - A new breed of engineer" on June 30, 2007. ... www.engineering.utoronto.ca/news/070320072.htm - 14k - En cache - Pages similaires
Forum France: Bordeauxtiteprincess14, 25, 08-08-2007 15:45. Alizee-apartment a louer, Mohini Sain, 0, 05-08-2007 18:17. RECHERCHE SOUS LOC A BORDEAUX OU DANS SES ENVIRONS ...
www.reseauetudiant.com/forum/list/f85/ - 50k - En cache - Pages similaires
Professor Mohini Sain- [Traduire cette page] Mohini Sain, Ph.D, P.Eng · Professor and Director ... Last Updated June 21, 2007. Figure:Nano Bio-fibrils From Flax Bast Fibre. (30-60 nm)
www.forestry.utoronto.ca/people/sain/index.htm - 8k - En cache - Pages similaires
[DOC] Communiqué de presse Trois chercheurs de la University of British ...Format de fichier: Microsoft Word - Version HTML
Vancouver, C.-B., le 25 avril 2007 – Trois chercheurs de la University of British ... du British Columbia Institute of Technology, et Mohini Sain, Ph. D., ...
www.sfmnetwork.ca/docs/e/PR%20Larson%20McFarlane%20Moore%20May%2007%20french%20final.doc - Pages similaires [PPT] Slide 1Format de fichier: Microsoft Powerpoint - Version HTML
Dynamotive has allocated $1500000 for research through 2007… Alberta's first large-scale biofuel refinery ... Source: Dr. Mohini Sain. University of Toronto ...
www.nextenergy.org/.../Gord%20Surgeoner%20Ontario%20Agri-Food%20Technologies.ppt - Pages similairesutres résultats, domaine www.mri.gov.on.ca »

Browse Title Index- [Traduire cette page] Sreekumar Janardhnan, Mohini M. Sain. Vol 2, No 3 (2007), KEY CONSIDERATIONS IN THE DETERMINATION OF POLYELECTROLYTE CONCENTRATION BY THE COLLOIDAL ... www.scholarlyexchange.org/ojs/index.php/BIORES/search/titles?searchPage=2 - 27k - En cache - Pages similaires

MaRS LandingDate : 2007-03-08 Source : MaRS Landing Communiqué de presse 8 mars 2007 ... Mohini Sain, chercheuse à l'université de Toronto, est la co-chercheuse ... www.marslanding.ca/newsdetails.aspx?id=22&pagefrom=news_archives.aspx&Lang=fr-CA - 25k - En cache - Pages similaires

Outlook Conference 2006 - Conference Agenda... The Dow Chemical Company, Midland, Michigan; Mohini Sain - Professeur et directeur, ... Projet de loi américain sur les exploitations agricoles (2007) ... www.outlook2006.ca/Francais/ConferenceAgendaThurs.aspx - 27k - En cache - Pages similaires

Browse Title Index- [Traduire cette page] Ayan Chakraborty, Mohini M. Sain, and Mark T. Kortschot. Vol 2, No 3 (2007), MORPHOLOGICAL AND CHEMICAL NATURE OF FIBER STRANDS OF OIL PALM EMPTY-FRUIT-BUNCH ... www.bioresourcesjournal.com/index.php/BioRes/search/titles?searchPage=3 - 28k - En cache - Pages similaires

Welcome to GreenCore Composites Inc.- [Traduire cette page]12/10/2007 - GreenCore Recognized as one of Canada's Top 10 Cleantech Companies ... GreenCore Director and University of Toronto Professor Mohini Sain was ...

www.greencorenfc.com/news.htm - 10k - En cache - Pages similaires

Speaker Bios- [Traduire cette page] Dr. Mohini Sain, director of the Centre for Biocomposites and ... Toronto Regional Green Building Festival October 24-25, 2007 Atlantis Pavilions Ontario ...

www.greenbuildingfest.com/2006-agenda.asp?action=details&IUI=8 - 19k - En cache – Pages similaires

Financement agricole Canada - Le 23 mars 2007Dans le budget de 2007, le gouvernement investit jusqu'à 2 milliards de dollars à l'appui de .... explique le chercheur Mohini Sain, qui dirige le projet.

www.fcc-fac.ca/newsletters/fr/express/articles/20070323_f.asp - 56k - En cache – Pages similaires

[PDF] 2007 International Conference on Nanotechnology For the Forest ...Format de fichier: PDF/Adobe Acrobat - Version HTML

Mohini Sain, University of Toronto. 4:00 p.m. - 5:30 p.m. -- Session 10 ... All attendees of the 2007 International Conference on Nanotechnology for the ...

www.tappi.org/s_tappi/bin.asp?CID=9531&DID=553971&DOC=FILE.PDF - Pages similaires

CAT.INISTAuteur(s) / Author(s). SAIN Mohini M. (1) ; ... Copyright 2007 INIST-CNRS. All rights reserved. Toute reproduction ou diffusion même partielle, ... cat.inist.fr/?aModele=afficheN&cpsidt=897940 - Pages similaires

SPE April 2007.qxdFormat de fichier: PDF/Adobe Acrobat - Version HTML

April 2007. 5. Ontario Spectator. Fine-Celled Foam Structure For Automotive TPO Components. Ryan Seonggi Kim, Mohini Sain and Chul B. Park, University of ...

www.4spe.org/communities/newsletters/sections/s28_0704.pdf - Pages similaires

Nano Technology Group - NanoNewsTV- [Traduire cette page] DFG President's commitment for the years 2004-2007 is to focused on further ... Professor Mohini Sain in the University of Toronto's Faculty of Forestry has ...

www.thenanotechnologygroup.org/index.cfm?content=89 - 57k - En cache - Pages similaires

[PDF] Microsoft PowerPoint - Konecsni Biorefining_EPOBIO May 2007.pptFormat de fichier:

Mohini Sain

PDF/Adobe Acrobat - Version HTML

Mohini Sain: m.sain@utoronto.ca. ABIC 2007. September 23-26, 2007. A conference with a program extending over. Two and a half days with plenary and ...

www.epobio.net/workshop0705/presentations/JeromeKonecsni.pdf - Pages similaires

BioscienceWorld- [Traduire cette page] By Mohini Sain, PhD, Robert Jeng, Bradley Saville, PhD, Chun Bei Huang and .... Mohini Sain, Robert Jeng, and Martin Hubbes are with the University of ...

www.bioscienceworld.ca/ThermoplasticStarch - 32k - En cache - Pages similaires

Regional Innovations Networks (RINs) - SOBIN - OntarioBioProducts.com- [Traduire cette page]Press Releases. April 20, 2007 - SOBIN Elects Board of Director's for 2007 ... Dr. Mohini Sain, University of Toronto, Faculty of Forestry, www.ontariobioproducts.com/regional-networks/sobin.aspx - 30k - En cache - Pages similaires

Maren Roman | Faculty Information | Dept. of Wood Science and ...- [Traduire cette page]... Characterization and Properties; Kristiina Oksman and Mohini Sain, Eds.; ... 2007. Work in Progress: Development and Implementation of a Web-Based ...

www.woodscience.vt.edu/contactlists/facultydetail.asp?facultyID=23 - 68k - En cache - Pages similaires

American Scientific Publishers- [Traduire cette page] J. Biobased Materials and Bioenergy 1, 289–300 (2007) .... Ayan Chakraborty, Mohini Sain, Mark Kortschot, and Sean Cutler J. Biobased Mater.

www.aspbs.com/jbmbe/contents_jbmbe2007.htm - 61k - En cache - Pages similaires

Composites Part A: Applied Science and Manufacturing: Agro ...- [Traduire cette page] and Mohini Saina aCenter for Biocomposites and Biomaterials Processing, Received 26 October 2006; revised 19 January 2007; accepted 20 January 2007. ...

linkinghub.elsevier.com/retrieve/pii/S1359835X07000243 - Pages similaires [PDF] Slide 1Format de fichier: PDF/Adobe Acrobat - Version HTML

October 29, 2007. Dr. Gord Surgeoner. Ontario Agri-Food Technologies.... Courtesy of: Dr. Mohini Sain. University of Toronto ... www.agrifoodforum.com/english/Presentations/Surgeoner.pdf - Pages similaires