BRI NEWSLETTER
Issue 5, May 2018

Lakehead UNIVERSITY | Biorefining Research Institute

Dr. Ning Yan, University of Toronto, joins BRI

Professor Ning Yan, Ph.D. & PEng.
Distinguished Professor in Forest Biomaterials Engineering
Chair in Value Added Wood and Composite
Department of Chemical Engineering and Applied Chemistry
Faculty of Applied Science and Engineering
University of Toronto

Professor Ning Yan received her BEng from Southeast University (China) in 1991 and her PhD degree in 1997 from the University of Toronto. Following employment with Pulp and Paper Research Institute of Canada (now FPInnovations), Trojan Technologies, and Xerox Corporation, she joined the University of Toronto in 2001 as an assistant professor in the Faculty of Forestry. She was promoted to the rank of full professor in 2012 and was awarded an endowed chair in Value Added Wood and Composite in 2014. Professor Yan joined the Department of Chemical Engineering and Applied Chemistry at the University of Toronto in July 2017. Professor Yan is recognized internationally for her contributions to advancing our fundamental understanding of forest biomaterials and developing innovative technologies for utilizing renewable biomass feedstock to produce bio-based materials and chemicals. In particular, Professor Yan has gained international recognition as a leader in conducting fundamental research and development for converting tree bark, a low value residual material from forest operations, into novel value-added products, such as bio-based adhesives, resins, polyols, foams, and lignin-containing nanocellulose materials. Her research on developing bark biorefinery has been featured in a wide range of media outlets, including the NSERC Research News, Biomass Magazine, Research Matters-Council of Ontario Universities, AgAnnex, Canadian Institute of Forestry, Research2Reality. Professor Yan has more than 120 refereed journal publications, 7 patent and patent applications, and 2 book chapters. She has delivered more than 85 invited talks and keynote speeches worldwide about her research work. Her research excellence is recognized by a number of prestigious awards, including the Ontario Early Researcher Award, Connaught Innovation Award, and NSERC Discovery Accelerator Supplements Award. Professor Yan organized and co-chaired premier *International Conference on Wood Adhesives* (2013, 2017), and *International Symposium on Bioplastics, Biocomposites, and Biorefining* (2014, 2016) conference series. She has served as an evaluation panel member for international granting agencies, including Academy of Finland; EU Sixth Framework Programme; Romania Executive Agency for Higher Education, Research, Development and Innovation; and Maine Technology Asset Fund. She is currently serving as an evaluation panel member for the NSERC Discovery Grant program. Professor Yan is an elected member of the Academic Board of the University of Toronto (2015-2018). She has served as a member of The Committee on Academic Policy and Programs (2015-2018) and the Planning and Budget Committee of the University of Toronto (2015-2016). Professor Yan is an Associate Director of the Pulp and Paper Centre (since 2004) and a founding member of the Centre for Bio-composites and Biomaterials Processing at the University of Toronto. In addition, she served as the Graduate Coordinator at the Faculty of Forestry from 2009 to 2012.

Ning – Welcome Aboard!

Inside this Issue

1 *Dr. Ning Yan, University of Toronto, joins BRI*
2 *Visit of MRIS Honorable Reza Moridi to LU*
2 *BRI develops a five-year Strategic Plan*
3 *BRI took active part in 2018 LU R&I Week*
3 *Dmitry Tarasov, Ph.D*
4 *Vasudeo Zambare, Ph.D.*
4 *Md. Shahidul Islam, Ph.D.*
4 *Shrikanta Sutradhar, M.Sc.*

Visit of MRIS Honorable Reza Moridi to LU

This past January, Honorable Reza Moridi (eighth from left), Minister of Research, Innovation, and Science (MRIS), visited Lakehead University (LU) to provide updates on the Ministry's recent activity, including the appointment of Ontario's first Chief Scientist. Minister Moridi took part in round-table discussions on the current research and innovation happenings in Thunder Bay, in particular Indigenous collaborations and the regional Bioeconomy. BRI Director, Dr. Lew Christopher (first from right), had the opportunity to join these discussions and spoke on the BRI's most recent developments offering insights on the BRI role in the LU's innovative goals.

BRI develops a five-year Strategic Plan

Anne Ostrom

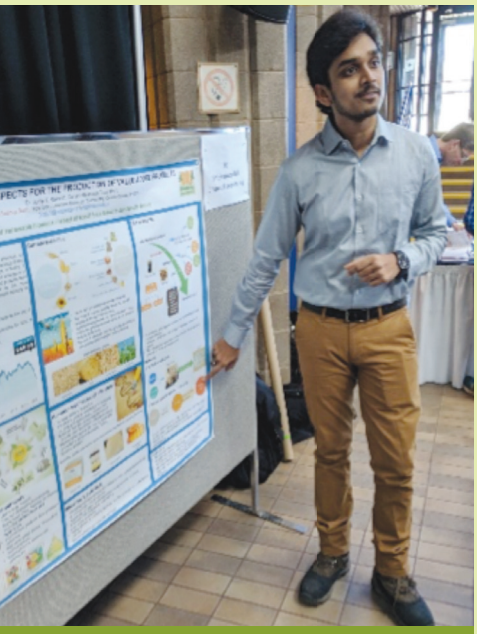
Strategic Planning Consultant, Ostrom Consulting

In February 2018, the BRI launched its first-ever strategic planning process. The goal is to create a 5-year plan (2018 to 2023) with strategic priorities, and realistic goals and outcomes that will help move the BRI toward its objectives and mission, and identify the key priorities for BRI domestically and on the global stage, in the context of the emerging Bioeconomy and Biorefining research and development. The Strategic Plan will be built upon BRI's vision "Create a world-class centre of excellence that is among the national and international leaders in forest innovation and biomass research." To assist in the Strategic Plan development, BRI hired Anne Ostrom from "Ostrom Consulting" based in Thunder Bay. Anne has 25 years experience and an extensive background writing proposals and strategic plans in the public health, health care, community, and business sectors in Northwestern Ontario. As consultation is an important step in any strategic planning process, Anne has held focus groups with BRI associate faculty members, students and post-docs involved in BRI-relevant research. All were asked to identify opportunities, priorities, and recommendations. To date, interviews have been held with 25 key stakeholders. These included members of the BRI Advisory Board, a group of individuals who play a number of roles in various networks and collaborations. They are a mix of industry, research, and NGO partners with regional, national and global perspectives. As well, stakeholders in the realms of post-secondary education and research, regional economic development and municipal government were also interviewed. Moving forward, a high level version of the plan will be reviewed by Advisory Board members this spring, with the intent of finalizing the plan in the fall.

A huge thank-you to all who have taken the time and energy to provide input!

Anne Ostrom (second from right) conducted an interview with a focus group comprising BRI MSc, PhD and PDF researchers. The graduate students and post-docs were also asked about why they chose a Biorefining focus, and their career aspirations. Many went into this field to make a difference in the area of environmental sustainability. Common career aspirations were working in industry research and development, or as university faculty.

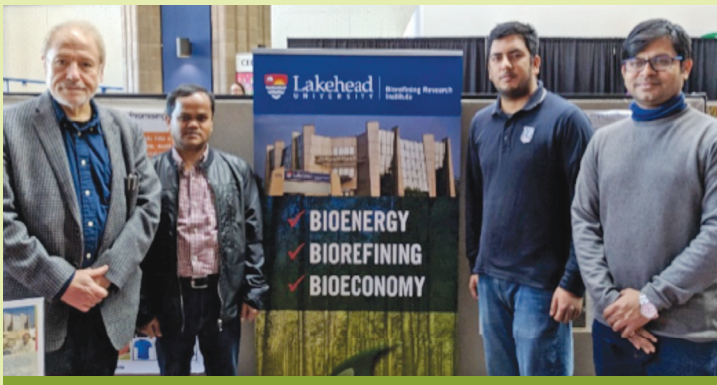
BRI took active part in 2018 LU R&I Week



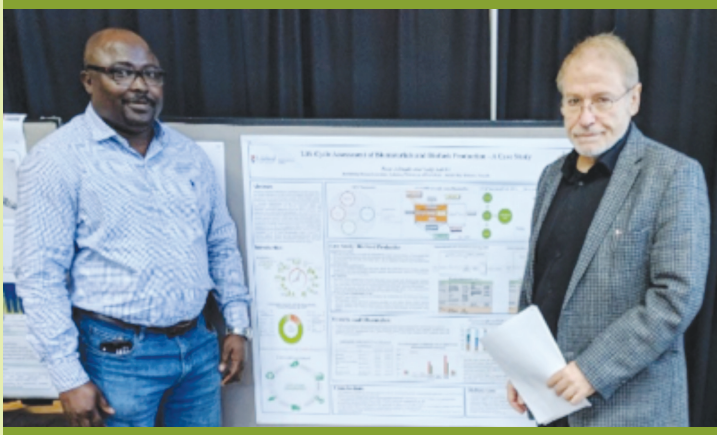
Dr. Sai Dalli (BRI PDF) presenting his work at the R&I postdoctoral poster competition, March 6, 2018.

The BRI had a great showing at Lakehead University (LU) Annual Research and Innovation (R&I) week, March 2-8, 2018. BRI faculty members, postdocs, students all took part in this year's R&I events. BRI's PDF, Sai Swaroop Dalli, was a presenter for "Northern Ignite", an evening where speakers were invited to discuss their research using only photos in a 20 seconds per slide x 20 slides format to engage the audience. Dr. Dalli gave a presentation on his work demonstrating the potential of wood-derived hemicellulose to produce several different chemicals that can further be upgraded to biodegradable polymers. His presentation highlighted the many interdisciplinary aspects of Biorefining research and development, fitting in well with the evening's theme of "Connections". BRI also took part in the "Faculty Research Day', "Postdoctoral Poster Competition", and hosted a booth with promotional materials and displays. More information about the BRI participation in the R&I week is presented below.

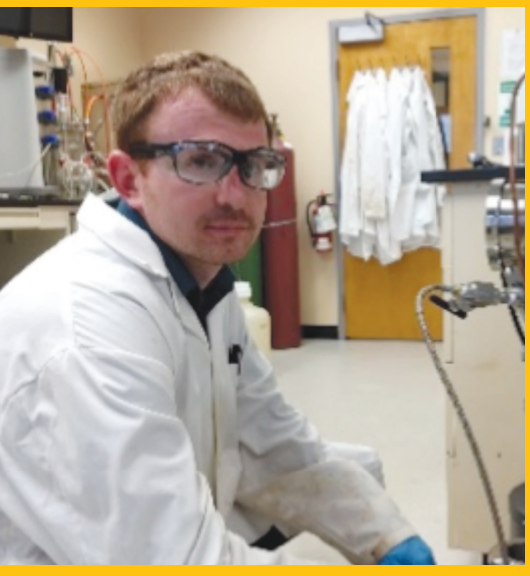
We wish to thank all the BRI students, postdocs and faculty members for their active participation in the 2018 R&I week!



Left to right: Dr. Lew Christopher (BRI Director), Dr. Nur Alam, (BRI Research Professor), Md Shariful Islamand (MSc student) and Shrikanta Suthradar (PhD student) at the BRI display table during the "Faculty Research Day" of the R&I week, March 8, 2018.



Dr. Peter Adewale, a PDF at BRI (right), and Dr. Lew Christopher, Director of BRI (right), at the poster display of Dr. Adewale during the R&I week. Dr. Christopher served as judge in the postdoctoral poster competition, March 6, 2018.



Dmitry Tarasov, Ph.D.

NOHFC Biorefining Research Intern, BRI

Dr. Dmitry Tarasov has recently joined the Biorefinery Research Institute (BRI) as a NOHFC Biorefining Research Intern. Dr. Tarasov obtained his Ph.D. in Forestry Sciences at Lakehead University under the supervision of Dr. Pedram Fatehi and Dr. Mathew Leitch. Prior to this, Dmitry completed his M.Sc. degree in Forestry (Lakehead University), M.Sc. degree in Technology (Lappeenranta University of Technology, Finland) and B.Sc. degree in Environmental Engineering (St. Petersburg State Electrotechnical University, Russia). During his Ph.D. studies his research was focused on the extraction of lignocellulosic materials from spent liquors of pulp and paper industries. Dr. Tarasov has authored/co-authored five papers, and has presented both poster and oral presentations at several conferences. Currently here at the BRI, Dr. Tarasov is researching the methods for modifications of technical lignins for their valorization into value-added products.

Vasudeo Zambare, Ph.D.

Postdoctoral Fellow, BRI

Dr. Vasudeo P. Zambare joined BRI as a PDF beginning of May this year.

He graduated from North Maharashtra University, Jalgaon, Maharashtra (India) with a B.Sc. in Chemistry and M.Sc. in Biochemistry degree in 1999 and 2001, respectively. In 2007, he completed his Ph.D. degree in Biochemistry from Agharkar Research Institute of Pune University, Pune, Maharashtra (India). His PhD work has resulted in three patents (Indian, US and German).

His publication record includes 199 total works, including research articles, reviews, books, book chapters, patents, proceedings, popular articles, nucleotide sequences, conferences and workshops. He was the recipient of the Best Scientist Award 2007-2008 from the Pune Rotary Club. He is honored as a Fellow of six different scientific societies. Dr. Zambare serves as editor-in-chief and editorial board member for several national and international journals.

He started his research career as a Microbiologist at Jain Food Park (India) and reached to high-level management positions in several biotech industries In India such as Advanced Enzymes Technologies, Rossari Biotech, Sequence Biotech, Jai Biotech Industries, Om Biotechnologies and Village Naturals.

Dr. Zambare's main research areas include biomass, biofuels, bioenergy, extremophiles, industrial enzymes, fermentation and waste management. His current focus at BRI will be on upgrading low-cost biomass feedstocks and underutilized side-streams from industry to value-adding bioproducts in alignment with the circular bioeconomy approach.

Md. Shahidul Islam, Ph.D.

Postdoctoral Fellow, BRI

Md. Shahidul Islam received both his Bachelor and Master of Science degrees from the Department of Applied Chemistry and Chemical Technology at the University of Dhaka, Bangladesh. Following this he completed his Ph.D in Environmental Engineering at Concordia University, Montreal, Canada. During his Master's program, he fabricated novel materials for environmental applications. His Ph.D program consisted of research in the area of environmental engineering, with a focus on emerging materials and processes applied for water purification. Dr. Islam is currently a postdoctoral fellow at Lakehead University's Biorefining Research Institute (BRI), conducting research in the area of functional cellulosic applications for textile fibres.

Shrikanta Sutradhar, M.Sc.

Ph.D. student in Chemistry and Material Sciences, BRI

I started my PhD program in the Department of Chemistry and Material Sciences at Lakehead University in 2018. Before coming to Thunder Bay, I had completed my BSc in Applied Chemistry and my MSc in Chemical Engineering from the University of Dhaka, Bangladesh. Moreover, I spent two years as a Research Fellow at the Pulp and Paper Research Division in the Bangladesh Council of Scientific and Industrial Research. I have started my work on the "Valorization of Lignin into Value-Added Products" at the BRI under the supervision of Dr. Lew Christopher. Currently, my research focuses on conversion of lignin to humic substances that can be used as a bio-fertilizer to accelerate plant growth through enhanced photosynthetic pathways and plant metabolism. I am deeply grateful to Dr. Christopher and Dr. Nur Alam for giving me this opportunity and support to continue my research. Finally, I would like to thank Lakehead University administration for creating a multicultural environment by offering admission to international students every year.