



Richard Kerekes received his Hall of Fame plaque from Kelly Helein, Paper Discovery Centre Co-Chair and Dan Clarahan, Board Member.

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As the last quarter of 2018 slips to a close, *Pulp Digest* is happy to record our community events and achievements in this edition, covering the timeline of July to December.

Hall of Fame honour for Prof. Em. Richard Kerekes

Cover story

Richard Kerekes, Professor Emeritus, UBC's Chemical and Biological Engineering Department, was inducted into the Paper Industry International Hall of Fame in Appleton, Wisconsin, USA on October 4, 2018. The award was granted in recognition of his preeminent academic and research contributions to the paper industry.

Richard J. Kerekes received his B.A.Sc. (1963) and M.A.Sc. (1965) in Mechanical Engineering from the University of Toronto and his Ph.D. (1970) in Chemical Engineering from McGill University. He joined the Pulp and Paper Research Institute of Canada (Paprican) in 1971. In 1978, Dr. Kerekes was appointed Honorary Professor in Chemical Engineering at UBC where he initiated the co-operative post-graduate program between Paprican and UBC.

He was the founding Director of the UBC Pulp and Paper Centre, leading it from its inception in 1986, until his retirement in 2005. In 2001, he was appointed the first Paprican Professor of Pulp and Paper Engineering at UBC. Upon retirement, he served as Director of PAPIER, an organization of Canadian university academics involved in pulp and paper research. He also served as Associate Scientific Editor of the *Journal of Pulp and Paper Science* from 1984-93.

Dr Kerekes has received numerous awards for his educational and research contributions, including the Beloit Award of the Engineering Division of TAPPI



Professor Emeritus Richard Kerekes

(1997), TAPPI Research & Development W.H.Aiken Prize (2004), Johannes van den Akker Prize for best paper in paper physics (2007 and 2009). He was elected fellow of TAPPI, PAPTAC, IAWS, and the Canadian Academy of Engineering. In 1999, Prof Kerekes was awarded the John S. Bates Memorial Gold Medal of PAPTAC and in 2010 the TAPPI Gunnar Nicholson Gold Medal.

The Paper International Hall of Fame, founded in 1992, has honoured and recognized a total of 135 giants of the paper industry from around the world whose accomplishments have truly revolutionized civilization.

PPC Events

BioProducts Institute holds first Researcher Day at UBC



Researcher Day on September 12 brought in an estimated 300 guests from across the campus. The day began with a keynote address by Dr. Elizabeth R. Gillies of Western University entitled “Controlled Degradation of Plastics: From Pharmaceuticals to Agricultural Products”.

The morning session was packed with 39 presentations from researchers of four faculties—Applied Science, Forestry, Land and Food Systems and Science. These presentations followed a familiar 3-minute format that

student researchers are comfortable with. Faculty members and the keynote speaker formed the panel of judges to award top three speakers Visa gift cards as prizes. A similar set of prizes was allocated to three posters in the afternoon session.

Some of our presenters’ research on this day was also earmarked for attention by UBC’s Media Relations team. We look forward to 2019 to bring you more news, stories and events about the BioProducts Insititue.



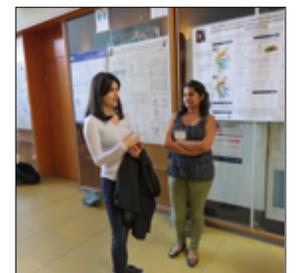
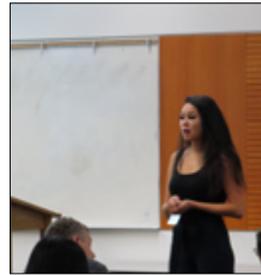
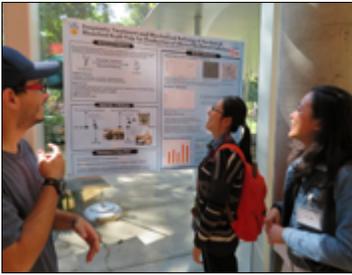
Above: Participating speakers and presenters at the event.

Prof. Elizabeth R. Gillies, keynote speaker

BioProducts Institute holds first Researcher Day at UBC



Presenters and attendees at the one-day event



PPC Events

Energy Reduction in Mechanical Pulping - Steering Committee Meeting

The Pulp and Paper Centre organized an annual steering committee meeting of one of its programs, the energy reduction in mechanical pulping (ERMP) in its Vancouver campus. Our ERMP program partners with NSERC and with pulp and paper industries having a strong presence in British Columbia to achieve mutual goals in energy reduction.

The steering committee met on October 2 at the Fred Kaiser Building. ERMP researchers shared their most recent research findings with the group of industry partners, many of whom attended in person, while a few others connected remotely via Skype Business.



Principal Investigator Dr. James Olson, opened the day's proceedings.



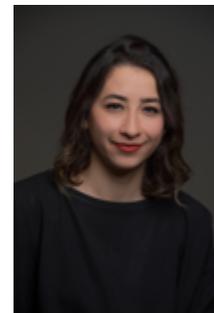
Invited industry delegates and members of the ERMP Steering Committee

HQPs: Graduating Students in the MEL Program

The Master of Engineering (MEL) Green BioProducts program at UBC will soon have highly qualified personnel ready to join the workforce. The candidates graduate this December, equipped with stellar skillsets and leadership qualities. *Pulp Digest* shares two of their profiles* for potential employers to connect.

Hilal Savas

Before joining MEL program at UBC, I had built a unique background; a chemical and biological engineering degree, with six years of multi-industry strategy and operations experience in developed and emerging markets. I am passionate about the intersection of the bio-based value chain and circular economy business models, having worked with Vancouver`s first zero-waste grocery store to reduce the plastic consumption by 300,000 containers per year. This year at MEL helped me gear my cross-functional technical and business skills to develop sustainable and profitable solutions for the growing circular economy.



Key Accomplishments

- Built a sales and marketing operations for Dubai-based startup, and led expansion of the company into Turkey. Grew operations team from 3 to 12 people in two years to cover 700 locations in the UAE, Kuwait, Bahrain, and Turkey.
- Led multi-stakeholder projects with P&G Dubai for four years. Led cross-functional teams to advance strategic planning of a new emerging channel and achieved a net sale of US\$10.2 million in 2014.
- Trained by former US Vice-President, Al Gore in summer of 2018 to become a Climate Leader. Since then, I have been giving presentations and connecting with local communities to support the global fight for climate solutions.

Experience

- Managing Partner, Snappcard, Istanbul, Turkey
- Head of Business Development, Snappcard, Dubai, United Arab Emirates
- Channel Manager, Transmed – P&G MENA Distributor, United Arab Emirates

Education

- Master of Engineering Leadership in Green Bio-Products, University of British Columbia, Vancouver, Canada
- Bachelor of Science in Chemical and Biological Engineering, Koc University, Istanbul, Turkey.

Contact

[linkedin.com/in/hilalsavas](https://www.linkedin.com/in/hilalsavas); Tel: 1-604 -779-7865.

*Source: These two profiles were excerpted from UBC Master of Engineering Leadership, Class of 2018 Profile Book.

Eisuke Takahisa

I am an organic and analytical chemist with a background in the flavour and fragrance industry. Through my 13 years of professional experience, I acquired diverse skills working with various clients in the functional food, cosmetics, and household products sectors. The compact industry structure mandates overarching knowledge from R&D phase to large-scale production which equipped me with engineering knowledge as well. I have also worked in a managerial position and as a group leader. My passion is to make the consumer goods sector more sustainable.



Key Accomplishments

- Acted as lead manager in developing a microcapsule business, from the conceptual stage through lab bench-scale research, up to factory production at 1 MT scale. Microcapsules are friction-sensitive, on-demand micro containers filled with functional materials.
- Invented and patented a molecular distillation process that simultaneously enriches 6-Shogaol content in ginger extracts. The process retains the natural status of the extract, and the enriched products serve effective as swallowing aids in older adults' ingestion of food and pills.
- Authored 18 articles in peer-reviewed academic journals, and wrote a book's chapter. Discovered and patented five new sulfur-containing compounds found in food aroma using a self-designed flash vacuum pyrolysis apparatus.

Experience

- Senior Researcher & Manager, T. Hasegawa Co., Ltd, Tokyo, Japan
- Senior Chemist, T. Hasegawa Co., Ltd, Tokyo, Japan
- Certified English-Japanese interpreter, working in various engineering fields globally

Education

- Master of Engineering Leadership in Green Bio-Products, University of British Columbia, Vancouver, Canada
- Dr. rer. Nat. (Ph. D.) in Analytical Chemistry, Technical University of Munich, Munich, Germany
- Master of Engineering in Chemical Engineering, Tokyo Institute of Technology, Tokyo, Japan
- Bachelor of Engineering in Biomolecular Engineering, Tokyo Institute of Technology, Tokyo, Japan

Contact

[linkedin.com/in/eisuke-takahisa](https://www.linkedin.com/in/eisuke-takahisa)

BPI Seminar Series 2018

The BioProducts Institute's 2018 Seminar Series launched in Spring, had an exciting field of researchers in biomass, biodesign and bioproducts deliver presentations. These seminars enable UBC researchers (students and faculty) gain valuable alliances through such interactions.

Dr. Marcus Fulde

Professor, Institute of Microbiology and Epizootics at Freie Universität Berlin.

Lessons from the neonate mouse: a model system to study microbiota development and bacterial pathogenesis

Friday, November 16. 4:00 – 5:00 p.m. FNH 220, 2205 East Mall

Dr. Orlando Rojas

Professor, Chair of Materials Platform, Aalto University, Finland

Biobased Polymers: Material Bank for the Development of Structure, Color and Function

Wednesday, Sept. 5. 11:00 a.m. – noon. Henry Angus Building, R- 334

Dr. Kristiina Oksman

Professor and Director of Composite Center

Luleå University of Technology Laboratory, Sweden

Bionanomaterials and Their Use in Composites

Wednesday, July 18. 12:30–1:30 p.m. FSC - 2424 Main Mall - R 1001

Dr. Tapio Salmi

Academy Professor, Department of Chemistry

Åbo Akademi University, Finland

Refining Biomass to Chemicals - What Can Chemical Reaction Engineering Do?

Wednesday, July 16. 1:00–2:00 p.m. CHBE, 2360 East Mall- R 202

Dr. Xiao Zhang

Associate Professor, Voiland School of Chemical Engineering and Bioengineering, Washington State University

Oxidative Lignin Valorization to Fuel, Chemicals and Materials

Pulp Digest, July to December 2018



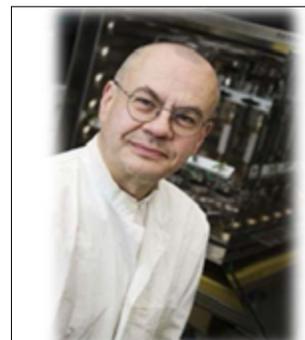
Dr. Marcus Fulde



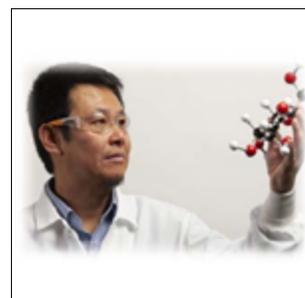
Dr. Orlando Rojas



Dr. Kristiina Oksman



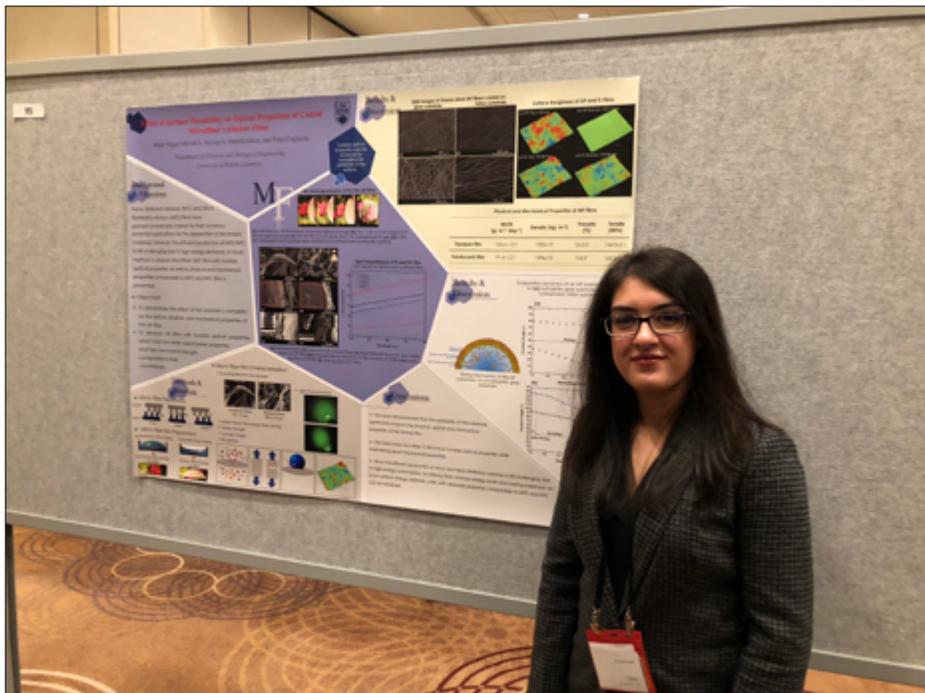
Dr. Tapio Salmi



Dr. Xiao Zhang

Awards

Mehr Negar Mirvakili was awarded the first place in the CSChE 2018 Graduate Student Poster Competition for Effect of Surface Wettability on Optical Properties of Casted Microfibrillated Cellulose Films. The competition was part of the XXIX InterAmerican Congress of Chemical Engineering, incorporating the 68th Canadian Chemical Engineering Conference in Toronto on October 28-31.



Negar in front of her prize-winning poster at the Canadian Chemical Engineering Conference in Toronto.

Jayg Dimayacyac was awarded the second prize for his research paper, "Reduction of Energy Consumption in Thermomechanical Pulp Refining using Chlorine Dioxide," at the American Institute of Chemical Engineers (AIChE) Regional Conference in Montana in April. Jayg was invited to the national level conference in Philadelphia early November to speak further on his research. Jayg's time as a Work-Learn student under Prof. Rodger Beatson was certainly well spent.

Why did you choose UBC to do your research?

When I finished my PhD in Christchurch (NZ), I actually had to make a pretty difficult choice between the offer I got from UBC and two offers I had in Europe. I eventually decided to come here, and the opportunities for research and teaching at UBC were the key factor in my decision-making process. I don't regret having made that choice!

With my background in numerical analysis, I have a real passion for mathematical challenges in computational science and engineering. During my PhD I already started looking into applications in fluid dynamics, but only here in the Pulp and Paper Centre I have actually been involved in truly interdisciplinary projects. There is a lot that I have learnt from working with Anthony, Mark, Masoud, Jordan and others at UBC: How do applied scientists do research? What are the challenges and limitations of experimental investigations? What are the different perspectives of engineers, chemists, material scientists and mathematicians on a given problem and, not to be underestimated, how can they all understand each other?

What career plans have you made on completion of your work as a post-doctoral fellow at UBC?

I thoroughly enjoy the interdisciplinary nature of my work, and the incredible breadth and diversity of my research. One day I'm trying to prove a theorem to show for what parameters an algorithm converges, the other day I'm writing code for for simulating viscoplastic fluid flow, and other times I'm working with my collaborators trying to interpret numerical and experimental observations. There are many aspects of this work that I would love to investigate more in depth. Let's see where this is going to happen!



What other interests did you have time to pursue in British Columbia, as a visitor to this province?

After nine years of negligence, I finally managed to somehow brush up on my very rusty French! Funnily enough, I speak almost as much French as English in Vancouver!

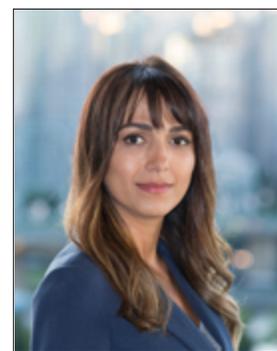
In my free time, and preferably when it's sunny, dry and warm, I love to take my bike out for a ride. Hiking with friends, a barbeque on the beach or kayaking in the bay are some other summer favourites. When the weather is more like it typically is in Vancouver, then I'm usually keen on anything related to cooking and eating!

What would be your takeaways after living in one of the most beautiful cities in the world?

I'm seriously considering to return for my retirement. And everyone who hasn't been to Christchurch yet should certainly plan a visit one day!!!

New Arrivals at PPC from July into December

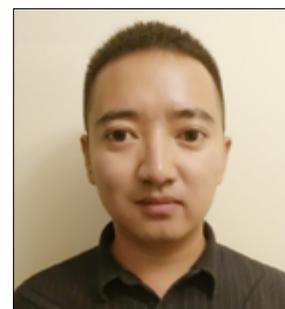
Sona Kazemi joined the ranks of PPC staff to manage the upcoming Phase 3 of ERMP research program. Sona's professional experience covers five years as a research engineer with an R&D enterprise, BC Research Inc., and as the chief technology officer with the clean-tech start-up, Mantra Energy Alternatives. Sona received her PhD from UBC in Chemical Engineering, and BSc and MSc from Sharif University of Technology, Tehran, Iran, also in Chemical Engineering.



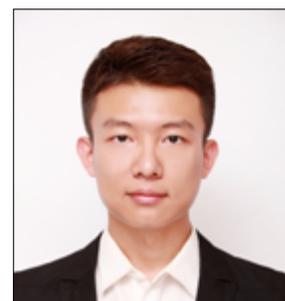
Reza Harirforoush accepted an appointment as postdoctoral research fellow in the Department of Chemical and Biological Engineering. His research collaborated with McMaster University in tomographic imaging of low consistency refined paper-making fibres to understand the effect of normal and shear forces on fibre morphology. Reza's doctoral studies at the University of Victoria investigated indications of the onset of fibre cutting using custom-built piezoelectric force sensors.



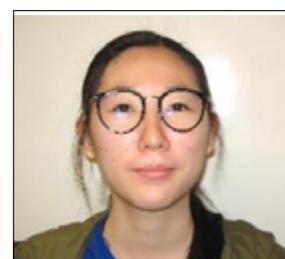
Lubing Shi is an exchange student from Southwest Jiaotong University, China. Driven by common research interest in railway sanding that examines the pneumatic delivery of sand particles in wheel and rail contact, Lubing comes to UBC to pursue his third year as a doctoral student under the supervision of Prof. Sheldon Green in Mechanical Engineering.



Junnan Chao is a postdoctoral research fellow in the Department of Chemical and Biological Engineering working on the development of forest residues to renewable natural gas technologies under the supervision of Dr. Xiaotao Bi. Junnan's research interests also include fluidization, heat and mass transfer, combustion and gasification.



Miaoran Li is a third-year coop student in Dr. Heather Trajano and Dr. Mark Martinez's team working on research projects in the field of microfibrillated cellulose and cellulase kinetics.



New Arrivals at PPC from July into December

Arthur Rostami is pursuing his MASc degree in Mechanical Engineering under the supervision of Dr. Sheldon Green to understand the fundamental mechanics of paper pressing and integrate that knowledge with this core research area. Arthur received his bachelor's degree in mechanical engineering at Iran University of Science and Technology, where he conducted numerical studies on non-Newtonian, multi-phase flow and heat transfer inside porous media.



Conferences

Invited Presentations



Prof. Mark D. Martinez

Mark was invited to deliver two presentations at the Pan Pacific Conference in conjunction with the Appita Fibre Value Chain Conference in Rotorua, New Zealand, 4-7 December.

- Processing Opportunities Created through Rheology: New MFC Methodology
- Looking at Dewatering from a Different Light: Insights from Consolidation Theory

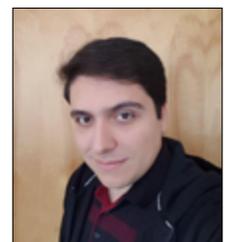


PhD Theses

Papers

Amir Farzad Forughi, post doctoral fellow, was awarded his PhD in July. His research and defence was about:

- Paper Drying: Experimental Studies on the Influence of Dryer Fabric
<http://hdl.handle.net/2429/66544>



Jorge Enrique Rubiano Berna

Jorge presented his PhD defence on 6 November to a review team comprising his supervisor, Dr. James A. Olson, co-supervisor, Dr. Mark Martinez and fellow panelists.



Publications

Papers Published in Peer-reviewed Journals

Drying Technology, a peer-reviewed journal published two of **Amir Farzad Forughi's** papers in its September and October issues.

- Effect of dryer fabric structure on the performance of contact paper drying.
<https://doi.org/10.1080/07373937.2018.1469141>
- Through air drying of paper—the effect of dryer fabric.
<https://doi.org/10.1080/07373937.2018.1509082>



Announcements

The Stork Visited



Baby Mason

PPC sends the new parents warm congratulations.

Hui Tian, doctoral student at PPC, delivered a healthy baby boy on August 17 at BC Women's Hospital, Vancouver. His name is Mason E. Lu and he weighed 3.7 kilograms and measured 53 centimetres at birth.



Baby Dorsa

Reza Harirforoush, post doctoral fellow at PPC, and his wife Dr. Mahsa became parents for the first time with the birth of their daughter Dorsa. Baby Dorsa was born on July 16 at the Victoria General Hospital, and weighed 3.18 kilograms at birth.

Upcoming Events



Merry Christmas and the Warmest of Wishes to You and Your Family

A Happy Holiday Season

And a Wonderful 2019.



Term 2 of the Winter Session begins on Wednesday, January 2, 2019.

BioProducts Institute's Annual General Meeting takes place the morning of January 31.

Mid-term break runs from the week of February 18 to 22.

Term exams begin on Monday, April 8 and finish on Friday, April 26.



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You are welcome to contribute your stories and news of achievements to PPC's *Pulp Digest* as well as join our mailing list.

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