

Pulp Digest

Q3 and
Q4, 2017



James Olson, Interim Dean, Faculty of Applied Science, Richard J. Kerekes, author and PPC's founding director, and Chitra Arcot, book designer at the book release of "PPC Early Years".

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PPC Early Years – Book Release



Richard J. Kerekes, author and PPC's founding director signs copies of his book "PPC Early Years" in James Olson's office.

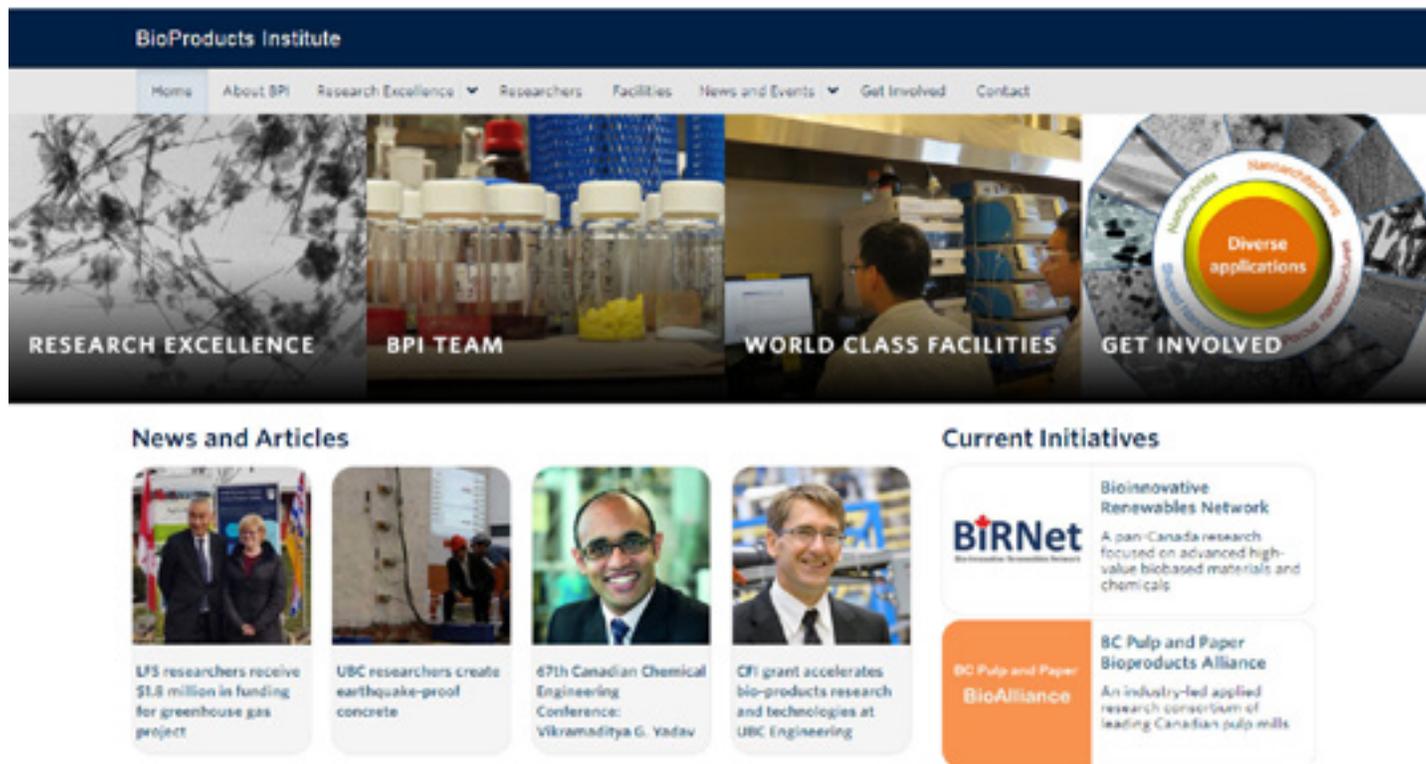
Cover Story

"In 2016 the Pulp and Paper Centre of the University of British Columbia (PPC) celebrated its 30th anniversary. An event commemorating this milestone took place on 29 May 2016 at which I was asked to give a seminar on the early years of the Centre. As its founding director, the PPC was my major preoccupation for more than 20 years. Moreover, senior citizens love nothing more than to talk about the "good old days". After the seminar I was asked to prepare a document on the PPC's early years, an assignment I accepted with great delight," said author and PPC founding director, Richard J. Kerekes.

"PPC Early Years" captures several milestones of PPC's history. The narrative style is fluid and transcribes the memories of four decades of progress and hard-won successes. "PPC Early Years" was published in a variety of formats: web, print, and two digital versions as downloadable PDF and Flash.

Thanks to Richard's personal collection of photographs covering three decades, the book is a storyhouse of pictures that complement its narrative text. Richard spent a few months working on the content. Chitra Arcot led the project from its drawing board stage in the design and production that began in July 2017. The book and the website were launched on December 20, 2017.

BPI website launched in November



Screen shot of BPI homepage, <http://bpi.ubc.ca>

BioProducts Institute (BPI) came into virtual existence in June 2017 to serve as a catalyst of innovation that connects relevant fundamental and applied expertise and resources to advance its clients' objectives in the bioeconomy. Since then, BPI has progressively expanded its outreach to attract industry partners and cross-faculty researchers at UBC to its membership as well as develop a strong network of grant funding to sustain its diverse goals.

BPI's objective is to positively impact research and technology development of bio-based products that will build on Canada's significant investment and global leadership in the bioeconomy to help turn the tide of global climate change. The application of emerging biocatalysts, supplemented with world-leading catalytic polymer chemistry, provides the potential to

create molecular engineered and functionalized nano, fibre and polymeric composite materials at the global vanguard of materials science that will revolutionize products from biomedicine to transportation.

(Source: Information curated from website and grant applications.)

The website, bpi.ubc.ca, is the outcome of joint initiatives of Alexandra Stuthridge, BPI's Technical Business Manager, Chitra Arcot, Communications Coordinator and BPI Business Support, and APSC IT team led by Regie Sacdalan and his students Irem Ozekes and Jean-Robert Clarke.

PPC Research Steering Group meeting

Members of the PPC research steering group comprising researchers and faculty members from universities (CRD-UBC-Valmet-UTQR), and industry met at PPC on Wednesday, August 30 for a full day of discussion, lab tours and presentations.

This meeting is an important annual feature in PPC's event calendar. Members present at the meeting met the quorum required.

- Jean-Pierre Bousquet from Valmet
- Eric Loranger from UQTR
- Bouchaib El Idrissi from UQTR
- Robert Lanuoette from UQTR
- Nicholas McIntosh from UBC
- Daniel Paterson from UBC
- Tom Eaves from UBC
- Neil Balmforth from UBC
- Mona Rahmani from UBC
- Angelo DiGirolamo from Valmet
- Patrik Petterson from Valmet

Mark Martinez, PPC Director chaired the meeting and led the discussions. Guest invitees and observers included PPC staff, George Soong, Meaghan Miller, Reanna Seifert and meeting organizer, Chitra Arcot.

Daniel Paterson, Tom Eaves and Bouchaib El-Idrissi presented their research findings and fielded questions at the end of their session.

- Daniel - "Material characterization and twin roll press"
- Tom - "Simplifying the screw press"
- Bouchaib - "Dewatering parameters in a screw press"



Mark Martinez and members of the research steering group (left to right) - Jean-Pierre, Robert, Eric, Bouchaib and Angelo



Daniel (top, far left) and Bouchaib (below) presenting their research to the group.



Reanna (right), George (centre) and Angelo (back left) listen as Jean-Pierre expounds a theory in the lab.

PPC News

PPC Research Steering Group meeting



Members of the research steering group on a tour of the high headroom lab



(Left to right) Mark, Mona,, Robert, Jean-Pierre, Angelo, Patrik, Bouchaib and Neil at the research steering group.

New Faces

Please join us in welcoming new faces to the Pulp and Paper Centre.



Vanessa Van Aert graduated from UBC in May 2017 with a Bachelor's degree in chemical engineering.. Vanessa's previous work experience includes positions with Quesnel River Pulp and Econotech Services. As a process technician with QRP, she conducted quality assurance tests on the finished softwood BCTMP product to ensure it was on-spec, and she was also the primary technician for a low consistency refining project at the mill. As a lab technician at Econotech Services, a provider of testing services for pulp and paper products, Vanessa analyzed hardwood and softwood kraft pulp following TAPPI, PAPTAC, ISO, and SCAN standard methods. Vanessa joined the ERMP program as lab technician.



Community Outreach

The Gift of Giving

Monthly papermaking events at Ronald McDonald House to booths at the Vancouver Folk Music Festival and open doors on UBC's Imagine Day, volunteers from the Pulp and Paper Centre (PPC) bring the science of papermaking alive and vibrant to children and adults. Live and interactive papermaking demos are a fun way of linking a traditional art form to laser technology that tests the tensile strength of a variety of natural fibres and bio-materials that find their way into bio-products that we use in our everyday life.

PPC's community outreach springs from a straightforward desire of providing and promoting a good, clean, green fun activity. Who knows how the spirit of curiosity will excite young minds and interest to develop grander pathways of careers in science and engineering?

Meet our volunteers

Students

François Audard is a post-doctoral researcher investigating fluid mechanics, multiphase flows in refinery processes and multi-scale modelling.

Marzieh Ebrahimi received her Ph.D from Chemical Engineering department of UBC. She found this volunteer experience amazing and worthwhile. **Amir Farzad Forughi** is a PhD candidate in Mechanical Engineering and researches flow visualization, porous media and experimental thermofluids. **Ehsan Zaman** is a doctoral candidate at the Mechanical Engineering department. His main research area is computational fluid dynamics (CFD) in hydrocyclones. Other research areas of interest to him are turbulence and multiphase flows. **Sudipta Mitra's** Ph.D research extends ultrasound refining of fibre suspensions and the effect of fibre morphology on mixing and refining of mixtures of softwoods and hardwoods. **Zhaoyang**

Yuan completed his Ph.D. at Department of Chemical and Biological Engineering in March and continued as a post-doctoral researcher. His Ph.D work focused on understanding silica and hemicellulose removal from bamboo for the production of kraft pulp or dissolving pulp.

Mohammad Shanbghazani is working on his Ph.D as are fellow researchers, **Daniel Paterson** and **Nicholas McIntosh**. **Justin Roberts**, **Ash Gautam** and **Ralohn Hunt** are pursuing different programs at the Master degree level. **Miguel Villalba** is also an MASc student in Mechanical Engineering with a research interest in fluid mechanics and heat transfer. **Albert Kong** is a coop student who worked with Amir Farzad. In Albert's words, "Volunteering at the Ronald McDonald house was a very eye-opening experience. It did not occur to me that a research institute such as the PPC could impact the community in such a direct and meaningful way. I would encourage other institutions to try and explore ways they can give back to the community as the PPC has."

Staff

George Soong, Safety and Operations Officer
Reanna Seifert, Lab Research Technician
Chitra Arcot, Communications Coordinator
Wendy Lock, Manager, Cooperative Education Engineering program

Faculty

Dr. Nuwan Sella Kapu is assistant director of the MEL in Green Bio-Products program and a lecturer in Chemical and Biological Engineering in the Faculty of Applied Science. **Dr. Bhushan Gopaluni** is the Associate Dean, Education and Professional Development in the Faculty of Applied Science.

Staff at Ronald McDonald House (RMH) Vancouver are very appreciative of the activities we arrange for their residents. Johanka, the programs coordinator has this to say, "Once a month PPC staff and students come to the house to share their passion for paper making with the families staying here. They bring all the supplies needed and guide kids through the process step by step. This hands-on program gives even the younger kids a chance to participate. They especially enjoy the decorating part, where they use glitter, dried flowers and leafs. They learn about how paper is made and where it comes from. And the best part is kids get to take their finished piece with them and even give it as a gift."



Papermaking is fun for adults too. At RMH, a volunteer (right) for another event happily joined in the fun with Chitra and Reanna.



RMH shared this picture of their staff, some volunteers and a few visitors.



Nuwan (above) and Ehsan (below) at the Vancouver Folk Music Festival demonstrating the art of papermaking.



Pizza party in progress at the end of year to thank our volunteers.



Publications

Journals

Zhaoyang Yuan, Yangbing Wen and Nuwan Sella Kapu. "Ethanol production from bamboo using mild alkaline pre-extraction followed by alkaline hydrogen peroxide pretreatment." *Bioresource Technology* 247 (2017): 242-49.

Zhaoyang Yuan and Yangbing Wen. "Evaluation of an integrated process to fully utilize bamboo biomass during the production of bioethanol." *Bioresource Technology* 236 (2017): 202-211.

Hui Cai, Zhaoyang Yuan, Xin Zhang, Shen Jun, Hui Zhang and James Olson. "The influence of consistency and fibre length on the yield stress of OCC pulp fibre suspensions." *BioResources* 12 (2017): 8368-77.

Announcements

The Stork Visited



Dr. Heather Trajano, Assistant Professor in the department of Chemical and Biological Engineering, Faculty of Applied Science, delivered a healthy girl, **Laura Madeline** on December 18 in Vancouver.

PPC sends the new parents warm congratulations.



Mohammad Shanbghazani, doctoral student researcher at PPC and his wife Solmaz were blessed with a son on October 27, 2017 in Vancouver. **Baby Adrian** weighed 3.6 kg and measured 53 cm at birth.

GREEN BIO-PRODUCTS

BECOME A GREEN BIO-PRODUCTS ENGINEERING EXPERT

If you're thinking about concentrating your career in the green bio-products sector, think about the difference a year at UBC can make. Build knowledge. Cross disciplines and boundaries. Gain confidence. Master the leadership skills that will take you to the next level. Invest in yourself, and in the growing bio-economy, at UBC.

From pharmaceuticals, food packaging, clothing and building materials to cutting-edge carbon nanofibres and biofuels, a new generation of green bio-products is being developed as a viable replacement for oil-based products and fuels.

UBC has an exceptional group of researchers who are furthering the development of biomaterials from trees, including specialty paper applications, fibre- and fibril-reinforced materials, and carbon fibres from lignin. The UBC Master of Engineering Leadership (MEL) in Green Bio-Products is designed to develop highly qualified personnel with the specialized knowledge and practical experience to assume challenging roles in the rapidly evolving lignocellulosic biomass products sector.

Unique in North America, this new degree will support graduate participation in the development of advanced technical processes, product ideation and senior project management roles.

CREATED BY THE FACULTIES OF APPLIED SCIENCE AND FORESTRY AND THE SAUDER SCHOOL OF BUSINESS

The Faculty of Applied Science at UBC is home to one of North America's premier engineering schools—UBC Engineering—bringing together 12 engineering programs. The UBC Faculty of Forestry is Canada's largest forestry school and a leader in education and research for forest conservation, forest products and natural resources.

The Sauder School of Business is one of the world's leading academic business schools and is dedicated to rigorous, relevant and experiential teaching. Together, these educational leaders collaborated closely with leading green bio-products industry members to create the UBC Master of Engineering Leadership in Green Bio-Products degree.

mel.ubc.ca

MEL | Master of
Engineering
Leadership



Upcoming Events

Term 2 begins on Wednesday, January 3. Check out [UBC's Vancouver academic calendar](#) for 2017-18.

UBC Engineering: Apply by Monday, January 15, 2018
<https://engineering.ubc.ca/admissions>

BPI General Meeting is scheduled in January 2018. Invitations will be sent out early in the new year.

Research team from United Nations Industrial Development Organization, New Delhi, India will visit PPC on February 8 and 9, 2018.

Social Media



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Contact

You are welcome to submit content to PPC's *Pulp Digest* or to join our mailing list. Please email Chitra Arcot, Communications Coordinator: Chitra.Arcot@ubc.ca