

Pulp Digest

Q2 2015

Dragon's Den



FIBRE Conference delegates taking part in the Dragon's Den competition.

The 3rd FIBRE Conference was held May 10-13 at Ecole Polytechnique in Montreal, QC. Masters, PhD and Postdocs attending the conference were part of a Dragon's Den competition, a case study competition on a real case of a forest value creation network.

In order to connect the case study of this activity to the FIBRE network, participants formed 9 teams that worked on an assigned novel product developed by researchers of the FIBRE network. Each team had three days to develop, present and defend its proposal in front of a Dragons' jury representing the different stakeholders in the case - Managing directors of companies, Local communities, Provincial/federal government, Universities/ R&D organizations.

Pulp and Paper Centre's Reza Korehei and Amirhossein Salimian were invited to serve as Product Specialists on their respective team, with their research selected as two of the nine novel products to be developed. As team product specialists they had to provide key information on the technology as well as guide the team. Participants worked towards proposing the best solution within a multidisciplinary consulting team of graduate students and PDF's with different domains of expertise, which proved to be a challenge over the course of the competition.

Neither PPC team snagged the top prize, but it was three days filled with healthy competition, energized minds, and a clear vision of how they can individually help sustain the future of our forest industry.

Visit page 8 for more.



The **Pulp and Paper Centre's 30th anniversary** is fast approaching and we plan on celebrating in a big way! We will be hosting an array of events during Alumni Weekend in May 2016, which will also coincide with the closing of UBC's Centennial. More details coming soon!

For those who would like to sit on the 30th anniversary Planning Committee, please contact Anna Jamroz at anna.jamroz@ubc.ca - alumni, industry, faculty and current students welcome!

Update your address, mention "PPC Alumni" and we'll send you an invitation:

Online: www.alumni.ubc.ca/contact/address.php

Email Alumni Relations Office:

christina.salvatori@ubc.ca Phone: 604.822.9454

Awards

UBC Engineering hosted **Engineering Excellence Celebration 2015**, an event to honour its own. The awards and dinner was held on April 9th at the Four Season's Hotel in Vancouver, BC. We are happy to announce that two PPC affiliates received awards at this year's celebration.

Outstanding Emeriti Faculty Award



Dr. Richard Kerekes

Dr. Richard Kerekes, one of the world's leading pulp and paper engineers, is Professor Emeritus in UBC's Chemical and Biological Engineering department, where he has taught since 1978. Although he is now retired, Dr. Kerekes maintains an active presence at UBC, mentoring new faculty, advising successive directors of the UBC Pulp and Paper Centre, assisting with the academic supervision of graduate students and postdoctoral fellows, and working to maintain and develop vital relationships between UBC and the pulp and paper industry.

Dr. Kerekes's career with UBC began in 1978 when he joined the Chemical Engineering Department as an Honorary Professor to initiate the landmark collaboration between UBC and the Pulp and Paper Institute of Canada (Paprican), now FPInnovations—a collaboration that has advanced research and education for the pulp and paper industry of BC and Canada. In 1983, Dr. Kerekes was appointed the founding Director of UBC's Pulp and Paper Centre, which he was instrumental in bringing into being. He served as Director from 1983 to 2005, during which the Centre established its world reputation and became a key resource for the pulp and paper industry that it remains to this day.

Dr. Kerekes's world-renowned research is widely applied throughout the industry and he is esteemed as one of the foremost international authorities in pulp and paper engineering. He has published breakthrough papers in a number of interdisciplinary fields. Through his substantial research, he has pioneered major advances in fibre suspension rheology, papermaking, and fibre processing.

Industry, academic and collegial regard for Dr. Kerekes and his work is profound. His leadership and mentorship continue to have a significant effect in academia and industry, with many of his former students holding key leadership positions in both. For his significant achievements, outstanding research, and unparalleled service to the pulp and paper community, he has received a distinct number of awards and honours. In 1989, Dr. Kerekes received APEGBC's Meritorious Achievement Award and, in 1993, he was elected a Fellow of the Canadian Academy of Engineering. He holds two gold medals, the John S. Bates Memorial Gold Medal from the Pulp and Paper Technical Association of Canada (PAPTAC) and the Gunnar Nicholson Gold Medal from the Technical Association of the Pulp and Paper Industry (TAPPI) of the US—each, the highest honour in its respective association.

Awards Cont.

Outstanding Future Alumnus Award

M. Hafizur Rahman is a PhD candidate in Chemical and Biological Engineering (CHBE) and served as the CHBE Graduate Students Club President in 2013–2014. In his time at UBC, Hafiz has distinguished himself as a dedicated, effective, and exemplary leader through his service to his department, his peers, and the greater university community.

Through his work with the CHBE Graduate Student Club, Hafiz led and participated in a number of initiatives that had a significant and positive impact on the CHBE department and students. Most notable of these initiatives was Hafiz's founding and organization of the extremely well attended and received Professional Development Speaker Series, at which faculty and industry leaders shared their career stories to help students with career preparation. For his work on this series, the UBC AMS awarded Hafiz their Just Desserts Award in 2013. Hafiz also organized a number of very successful outreach, social, and wellness events to raise CHBE's profile and to enhance its community and culture. He further contributed to CHBE by co-authoring a report to the Department Head on the program's strengths and weaknesses, which was incorporated into a larger report to the Faculty and the University. For his leadership in CHBE and his years of dedicated service, the department awarded Hafiz their Graduate Student Leadership Award in 2014.

Hafiz's work as a Teaching Assistant is regarded as nothing less than exceptional and his efforts were rewarded in 2014 with UBC's Killam Graduate Teaching Assistant Award, for which he was nominated by faculty within his department. A highly knowledgeable educator, Hafiz has become a role model for his fellow TAs and has set a new standard for success in the role.

Hafiz's research focus is hydrodynamics and modeling of a dual fluidized bed reactor for biomass steam gasification. As part of his research, he has made substantial progress towards the development of a novel device to monitor solids circulation rates and biomass gasification performance in dual bed systems. His research has the potential to make a significant impact on renewable and sustainable bioenergy systems and contribute specifically to an innovative dual bed technology currently under development at UBC.



M. Hafizur Rahman

Vanier Canada Graduate Scholarship

PPC researcher Qiugang Lu received the prestigious Vanier Canada Graduate Scholarship (Vanier CGS) awarded by the Natural Sciences and Engineering Research Council (NSERC) earlier this year in April. As a Vanier Scholar, Lu is among a select group of accomplished individuals chosen to receive this honour. Lu is a PhD candidate at UBC's Chemical and Biological Engineering under the supervision of Bhushan Gopaluni (CHBE), Philip Loewen (Math), and Michael Davies (ECE). His project on "Adaptive Control of Cross-Direction Process for Paper Machines" is in collaboration with Honeywell where he works with Michael Forbes and Johan Backstrom.

The Vanier CGS program plays an important role in fulfilling the Government of Canada's Science and Technology strategy to promote the development and application of leading-edge knowledge, support the development of a world-class workforce, and attract and retain the world's top graduate students. Each year, these highly prestigious scholarships are offered to doctoral students who have demonstrated strong leadership skills and a high standard of scholarly achievement in graduate studies in the natural sciences and engineering, social sciences and humanities, and health.

Gail Sherson is one of many successful Pulp and Paper Centre Alumni. Over the years, Gail continued to be a big supporter of the Centre, sitting on the Advisory Board of the Advanced Papermaking Initiative as well as representing FPInnovations on the Energy Reduction in Mechanical Pulping Steering Committee. Gail recently retired from FPInnovations as the Research Manager of Market Pulp so we caught up with her to gain some insight into her successful career and experience in the forestry industry.



Gail Sherson

Give us your career story in a nutshell. We'd love to hear what brought you to where you are now.

From high school days, I knew my interest was in applied science, but was not aware of career choices such as engineering. It was through working at a local pulp mill where I was living in New Zealand that I learned about chemical engineers and what they do. A decade later, after moving to Canada and working for some years at MacMillan Bloedel Research in Vancouver, I had the opportunity to attend UBC, completing my degree in Chemical Engineering followed by a Master's degree in Pulp and Paper Engineering. These two degrees fueled my continued interest in pulp and paper manufacturing, technology development and innovation and from there, I had the privilege of working for the bulk of my career in the mills or technology centres of several pulp and paper companies in Canada, New Zealand and the USA. Nine years ago, I returned to Vancouver, managing research programs and regional initiatives for FPInnovations.

The partnerships and initiatives you lead must have social as well as strategic business goals. How do you work to balance these and make sure both are achieved?

It is certainly important to understand the broader impacts of projects, and to strive for benefits for all key stakeholders. Fortunately, when it comes to innovation in Canada's forest sector, social and business goals are often aligned, especially with the emphasis on sustainable forestry, improved environmental performance and supplying global markets with products from a renewable resource. One of my personal motivators in leading programs and initiatives aimed at improving the economic performance of Canada's Forest Sector, is knowing how important this sector is to Canada's social well-being. For example, forest sector direct and indirect jobs are particularly important in sustaining rural communities.

Do you think there are benefits for industry to partner with academia to tackle challenging problems?

One of the big benefits is being able to bring specific expertise and scientific disciplines suited to solving a particular challenge. A good example of this is the UBC-led research program on energy reduction in mechanical pulping, bringing together industry and academia to address one of the biggest challenges facing mechanical pulp mills – the high and increasing cost of electricity. When it comes to transformation of Canada's forest sector, universities play a key role in discovery and early-stage development of game-changing technologies such as cellulose nanocrystals (CNC). At the same time, the value of training the future technical and business leaders for the sector cannot be underestimated, particularly with the complexity added by increased product diversification in the pulp and paper sector.

How have research themes changed over the years that you have been in the industry?

The biggest change in recent years has been the increase in product development, compared to early years when there was more focus on process development. Product

development is driven by the need for market diversification, and the need for additional revenue streams to sustain industry competitiveness. Other trends over the years have been in improved environmental performance (with huge gains made since 1990) and improved energy performance (today BC's forest sector is the largest green power producer in North America).

What end-use product or process that you helped develop are you most proud of?

What I am most proud of is not one single product or process, but putting together a balanced portfolio of projects aimed at improving pulp mill manufacturing performance (targeting savings in key areas such as fibre, energy, chemicals), and product performance (supporting pulp applications in new grades and end-uses). This portfolio is strongly aligned with industry needs and priorities.

What have been some challenges you have come across in your career and how did you overcome these?

One of the biggest challenges in the pulp and paper sector has been the disruptive impact of electronic media on paper markets, and the resulting rapid shifts in pulp markets, both geographically and by pulp end use. As FPIInnovations' Research Manager for Market Pulp mills, I worked with our research team to measure, improve and demonstrate the performance of Canadian market pulps (NBSK and BCTMP) in growing markets such as tissue and towel grades.

In your view, what are some direct benefits of working for the pulp and paper sector, specifically in Western Canada?

The biggest benefit is to be contributing to a sector that is important to the economic and social well-being of British Columbia. With this comes the opportunity to partner with governments and industry to deliver solutions that make a difference. This also means being part of a vibrant forest sector research and innovation infrastructure in BC, including UBC and FPIInnovations along with regional universities and technical institutes. The large manufacturing capacity in BC provides many opportunities for technology implementation – in fact the forest sector represents the largest manufacturing sector in BC.

What industry related blogs or books are you currently reading?

My regular reading material consists of market and business electronic newsletters to stay on top of global developments, market forces, competitive threats and opportunities. These are all essential components of successful innovation. A book I keep on hand is "Innovation: The Five Disciplines for Creating What Customers Want", by Curtis R. Carlson and William W. Wilmot.

Any advice to current students considering pursuing a career with P&P/Forestry/Research institutes?

I would say the first priority is to focus on technical excellence in a field that is in demand – there are many options ranging from traditional process engineering to advanced process control, materials science, fibre physics and cellulose / lignin chemistry. Whether you choose to work in manufacturing or research, make sure you have a good grounding in pulp and paper processes and products – after all even the most advanced new products have to be implemented in a manufacturing environment.

Strengthen your skill set with strong communication skills, and take every opportunity to get to know not only the technical aspects, but also the business, economic and market aspects of the forest sector.

After a successful inaugural 2014 UBC Student Session, the Pulp and Paper Centre was invited back to showcase innovative research relating to the forestry and bio-economy industry. The session was held on June 12th and chaired by UBC's Prof. Heather Trajano.

All six researchers conduct their primary research at the Centre, and their home departments range from Chemical and Biological Engineering to Mechanical Engineering. The students and researchers used this platform to demonstrate how their research and vision has the potential to make lasting changes and advance these strategically important industries.



Daniel Paterson

Daniel Paterson is a MASc candidate at the Dept. of Mechanical Engineering under the supervision of Dr. Mark Martinez of CHBE, and works closely with Drs. Duncan Hewitt and Neil Balmforth of the Mathematics Dept. The motivation for Daniel's presentation on "Understanding Dewatering of Papermaking Suspensions" is to understand the rapid dewatering of pulp suspensions for design, scale-up and developing best-practices during operation. The team has built upon mathematic models and customized these to describe the unique behavior of pulp. They have also designed specialty testing devices to validate their predictions.



Dr. Sadaf Shafie-Sabet

Dr. Sadaf Shafie-Sabet was a post doctoral fellow at the Centre, and since the conference has left the University to pursue a career in industry. Sadaf worked on the development of new applications for cellulose micro-fibres. As we know, petroleum-based synthetic polymers are widely used for packaging applications. She presented her study on "Rheological and Mechanical Properties of MFC Reinforced Sodium Alginate Biodegradable Films", in which she used MFC, a micro-size fibrous cellulose derivative, to reinforce sodium alginate. These biodegradable films have been found to have superior mechanical properties compared to those of commercial non-biodegradable films.



Jingqian Chen

Jingqian Chen is currently a PhD candidate at the Dept. of Chemical and Biological Engineering and is part of Dr. Heather Trajano's group. Her research focus is hemicellulose extraction by hydrolysis and the application in the pulp and paper industry. Her talk on "Production of Pulp Strength Additives from Pulp Mill Residues" was based on research that focused the hydrolysis of three different softwood residues, chip fines, hog fuels and primary sludge which was investigated as a mean of producing hemicellulose polysaccharides for use as strength additives.



Qiugang Lu

Qiugang Lu is currently a PhD candidate in the Dept. of Chemical and Biological Engineering under the supervision of Dr. Bhushan Gopaluni. His research interests include controller performance assessment, system identification and robust control, and his talk focused more specifically on "Performance Monitoring for the Cross-Directional Process of Paper Machines". A central goal of Qiugang's research is to realize the system monitoring, identification and controller tuning for the cross-direction processes online and in the closed-loop without user intervention. He is the recipient of the Four Year Fellowship (4YF) from UBC, and the prestigious NSERC Vanier Canada Graduate Scholarship (CGS) in 2015.



Dr. Reza Korehei

Dr. Reza Korehei is a Postdoctoral research fellow at the Centre. His talk on "Novel Cellulosic Foam Material: Platform and Product Development" reviewed the green (solvent-free) and simple techniques that produce ultra-light, bulk cellulose foam material from pulp suspension that he and his team have been developing. Their research has resulted in a low density, highly porous 3D cellulose foam material. The team is experimenting with various additives to increase the capability of the foam application in various industries, for example as home insulation, filtration and green packaging.

The PACWEST Technical Conference symbolizes the interdependence of those who develop technology in the pulp and paper industry and the many suppliers of related materials and equipment. It provides an opportunity to network with peers, industry leaders and technical experts while enhancing professional development. Through the numerous sessions, short courses, roundtable discussions and the popular trade fair, participants learn about new technologies, process improvement and the latest challenges and successes of the industry.

PacWest Conference Cont.



Dr. Ruhul Khan

Dr. Ruhul Khan is a Visiting Scientist and holds a permanent position as Principal Scientist at the Institute of Radiation and Polymer Technology in Bangladesh. His research interests are polymers, composites, nanofibers, pulp and paper. He has more than 100 international publications to date. His presentation on “Effect of Chitosan and Calcium Hydroxide on Mechanical and Microbiological Properties of Paper” reviewed his research on the addition of chitosan content and calcium hydroxide to pulp suspension. It shows a significant improvement in the tensile index, stretch, breaking length, stiffness and bursting strength of the paper, and serves as antibacterial agent for paper.



UBC Student Session speakers, along with session chair Dr. Heather Trajano (in green) and session coordinator Anna Jamroz (far right).

ERMP at PacWest



Part of the ERMP group that attended the PacWest Conference.

One day ahead of the conference, the Energy Reduction in Mechanical Pulping (ERMP) program held its bi-annual Steering Committee meeting. The program is now in its 9th year with funding from Natural Sciences and Engineering Research Council of Canada (NSERC) along with a consortium of 16 industrial partners and a collaboration with four universities (UBC, BCIT, UVic and UofT). The program's goal is to reduce energy and greenhouse gas emissions of one of BC's largest industries by 50 per cent before 2020.

The meeting was an opportunity for students and researchers of the program to provide updates on their individual projects and to highlight some successes and challenges. Emiliano Vargas, newly appointed to the program, gave an overview of the newest proposal of a mill scale up project – comparison of pilot and mill refining.

The group secured two guest speakers for the meeting. Dr. Richard Kerekes, Professor Emeritus of the Dept. of Chemical and Biological Engineering, gave a lively talk on “HC and LC Refining of Mechanical Pulp”. It was a delight to get a historical perspective from someone who has helped shape the industry.

Mr. An Qingchen, Manager of Mechanical Pulp Production at Sun Paper travelled from China to join the meeting. Sun Paper was founded in 1982 and currently has assets of 25.9 billion RMB, pulp and paper production with total capacity of 4.5 million tons. Mr. An spoke about “The Production and Application of high yield pulp”. The group heard about the production of high yield pulping as well as technology research and development of the APMP effluent zero discharge, as well the requirements of Sun Paper's paper machine for pulp quality.

To find out how you can get involved in the program, please contact Professor James Olson at james.olson@ubc.ca

During the PacWest Conference, Dr. James Olson, Associate Dean, Research & Industrial Partnerships at UBC's Applied Science, was part of a Panel Discussion on “TMP/ Energy” along with some of the ERMP partners: Catalyst Paper, Alberta Newsprint, BC Hydro and Andritz. The session was moderated by Carlo Dal Monte of Catalyst Paper.

Continued from page 1 "Dragon's Den".

Amirhossein Salimian's research on "Origami Engineering and Novel Acoustical 3D Paper Products" was featured as one of nine projects during the FIBRE Conference Dragon's Den Competition. Learn more about his exciting research below.



Dragon's Den group.

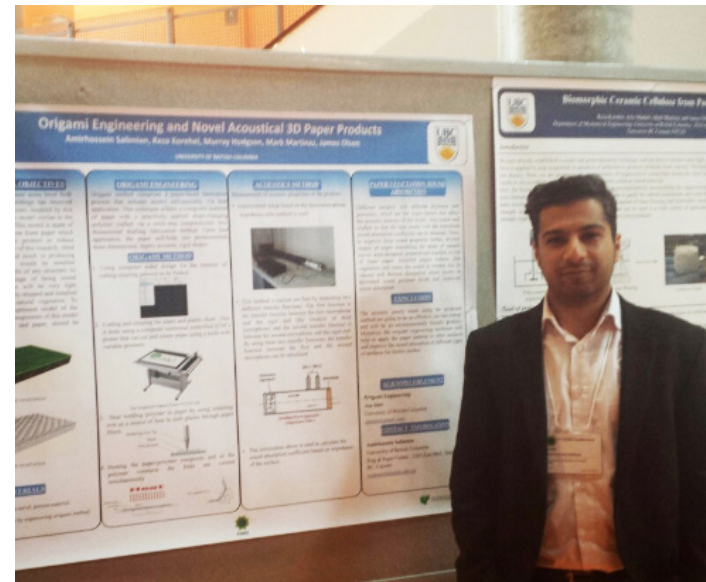
Using vegetation to attenuate noise levels within structures has received attention for the past 40 years. Inspired by this subject, we are studying a similar model titled "paper vegetation", which could result in acoustic panels that can be installed between the wall studs of any structure.

Two components of the paper vegetation model are foam paper and paper, which need to be tested and studied to obtain an optimal model.

Foam paper is a novel, porous material developed in the Pulp and Paper Centre at the University of British Columbia (UBC). Different samples with different thickness and porosities, which are the major factors that affect the acoustic features of the model, were tested and studied to obtain the best model with the maximum sound absorption coefficient.

Then, to improve these sound properties further, diverse shapes of paper resembling natural leaves were designed, prepared and installed on top of the foam paper. Installed papers behave like vegetation and deaden the sound due to viscous and thermal dissipation which results in decreased sound pressure levels and improved sound absorption.

To make these papers in various leaf-like shapes, we are going to use a novel engineering origami method which was also developed in UBC's Pulp and Paper Centre. This method uses various patterns that are designed using a drawing software and then cut by a cutting instrument. A polymer is then attached to the paper at specific points. The final pattern is then heated which causes the applied polymers to shrink and fold the paper in predetermined places, turning the 2D paper into 3D shapes.



Amirhossein at the Otto Maas Student Poster Session.

To learn more about Reza Korehei's research on "Novel cellulosic foam material", we invite you to visit the archives of *Pulp Digest* - his work was featured in the Q1 2015 issue. www.ppc.ubc.ca/news-letter

Publications

Journal

Maysam Saidi, Ziliang Wang, John R. Grace, C. Jim Lim, "Numerical and experimental investigation of hydrodynamic characteristics of a slot-rectangular spouted bed", Canadian Journal of Chemical Engineering. Accepted for publication.

Abstract: The gas-solid flow in a three-dimensional slot-rectangular spouted bed was studied experimentally and numerically. Predictions from the coupled computational fluid dynamics and Discrete Element Method, a powerful numerical approach, are compared with experimental measurements. Flow features inside the slot-rectangular spouted bed were investigated experimentally by means of a pressure transducer and an optical fiber probe to obtain profiles of pressure, voidage and particle flux. Static bed heights of 90, 120, and 150 mm of 2.85-mm-diameter particles were investigated at different spouting velocities to find the bed pressure drop, flow regime and minimum spouting velocity. For velocities exceeding the minimum spouting velocity, measured profiles of pressure, voidage and particle flux are in good agreement with simulation predictions.

Jiulong Sha, Abbas Nikbakht, Chen Wang, Hui Zhang, James Olson, "The Effect of Consistency and Freeness on the Yield Stress of Chemical Pulp Fibre Suspensions" BioResources, peer-reviewed online journal

Abstract: To study the influence of mechanical treatments on the yield stress of chemical pulp suspensions, a traditional rheometer, coupled with local velocity measurements (ultrasonic Doppler velocimetry), was used to measure yield stress of two types of commercial chemical pulp suspensions with different freeness values at mass concentrations (consistencies) ranging from 0.5 to 1.5%. Over the range of consistencies tested, the yield stress was found to depend on the consistency through a power law relationship for all tested samples. Moreover, the results showed that as the freeness decreased, the yield stress of hardwood suspensions increased to a maximum value, then decreased. This variation in yield stress was also observed in softwood suspensions with mass concentrations above 1%. However, when the consistency was lower than 0.75%, the yield stress of softwood suspensions increased with decreasing freeness. This behavior can be understood based on the underlying fibre properties of fibrillation, curl and stiffness, suggesting that fibre morphology plays a significant role on the yield stress of pulp suspensions over the concentrated range studied.

Conference Proceedings

Qiugang Lu, Lee Rippon, Bhushan Gopaluni, Michael Forbes, Philip Loewen, Johan Backstrom and Guy Dumont. 'Cross-directional controller performance monitoring for paper machines'. In the 2015 American Control Conference, Chicago, USA.

Mahdi Yousefi, Qiugang Lu, Bhushan Gopaluni, Philip Loewen, Michael Forbes, Guy Dumont and Johan Backstrom. 'Detecting model-plant mismatch without external excitation'. In the 2015 American Control Conference, Chicago, USA.

Maysam Saidi, Hassan Basirat Tabrizi, John R. Grace, C. Jim Lim, "Gas-solid flow modeling in a spouted bed using discrete element method", 23rd Annual International Mechanical Engineering Conference (ISME2015), 12-14 Mays 2015, Tehran, Iran.

Abstract: Studying particle behavior in a spouted bed using Discrete Element Method is the aim of this work. In this study, a numerical simulation using Eulerian-Lagrangian approach is used to solve the Navier-Stokes equations for the gas phase and Newton's laws for the solid phase to investigate the hydrodynamics of gas-solid flow in a spouted bed. The spouted bed studied has a rectangular cross-section which has been investigated in recent years because of its advantages in scale-up. The effect of inlet air flow on the creation of a fountain is investigated by applying different air velocities. Effects of higher bed height on increasing the minimum spouting velocity and the bed pressure drop are obtained and the particle positions are shown at different times.

Conference Proceedings Cont.



Views of Vittoria ES, Brazil. Photo: Richard Chandra

Dr. Richard Chandra, Research Associate at UBC's Wood Science, Forestry, had the opportunity to make a keynote presentation for the 7th International Colloquium on Eucalyptus Pulp (ICEP) that was held in Vittoria ES, Brazil this past May 29th. The conference was amazing featuring the "state of the art" in pulp and paper research, and most of the current "key figures" working in pulp and paper research including Dr. Jorge Colledette (Brazil), Dr. Hassan Jameel, (USA), Dr. Honghi Tran (Canada) and Dr. Gopal Goyal from International Paper (USA). The Colloquium also had significant industrial support with close to 40 industrial sponsors who all attended the informative conference sessions and showed great interest in the thriving pulp and paper research of both an applied and fundamental nature, particularly focused on Eucalyptus wood being conducted in Brazil. To learn more about ICEP, please visit www.7thicep.com.br/

The title of Richard's presentation was "Pretreatment, can we achieve effective hydrolysis of hardwoods (poplar/eucalyptus) without removing lignin?" and was co-authored by Dr. Jack Saddler, and was extremely well received as Richard described the potential conversion of some of Canada's currently shutdown mechanical pulping capacity for the production of pulp and sugars for biofuels, biochemical and biomaterials.

Course: Introduction to Pulp and Paper Technology



API Faculty, Robert Gooding, Aikawa, shows plates to API course participants. Photo: Anna Jamroz

A three-day course sponsored by the Advanced Papermaking Initiative (API) at UBC's Pulp and Paper Centre is an annual introductory-level course suitable for current engineering students along with recently hired engineers working in BC pulp and paper mills and supporting industries. Consisting of lectures in the mornings followed by lab exercises in the afternoons, the course is structured in a way to re-emphasize material and enhance understanding of the process. The 2015 course offered a new LC refining component, and ERMP researchers were involved in giving 30 students a refining lecture describing the principles of LC refiner operation and plate design, as well as an overview of the pilot plant setup and operation. The lecture was followed by a refining demonstration, during which kraft pulp was refined, and pulp samples were collected for later testing.

More information on course can be found at www.ppc.ubc.ca/api/course
Next course is scheduled for April 2016.

Fibre Art Courses



COMING SOON! The Centre is currently developing a series of artistic fibre courses designed for the paper lover. Both beginner and advanced levels, aimed at children and adults alike, the courses are varied. Here is just a taste of what you can expect: **Papermaking 101**: decorative paper and journals, **Party Paper**: mini paper lanterns and garlands, **Paper Home**: decorative paper bowls and wall art for the home, as well as **themes for gardens, weddings, new moms and fine art** including paper sculpting.

If you are interested in learning more or booking a group class, please email anna.jamroz@ubc.ca, and visit the PPC website as more information will be posted shortly.

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

Vancouver Folk Music Festival

PPC's Papermaking Station for kids

July 17-19, Jericho Beach Park, Vancouver

Join us at the Vancouver Folk Music Festival's "Little Folks Village" and discover the absolute magic of making hand-made paper. PPC volunteers will be on site for three days to teach kids the papermaking process and some science behind a forest. Details at thefestival.bc.ca

5th International Conference on Biorefinery

August 10-12, 2015, UBC, Vancouver

The conference will consist of plenary lectures, oral presentations and poster sessions. Topics to be covered include bioenergy, bio-based materials and chemicals, integration and integrated assessment of biorefinery technologies and processes. Details at icbb2015.org

Professional Development Courses

Fall 2015

The very popular Technical Training Course, Intro to Machine Shop, and Fluid Systems Course will be offered in Fall 2015. Dates will be posted online: ppc.ubc.ca/courses/

AMS Firstweek

Aug. 31- Sept. 14, various events around campus.

Connect with students from across the University during AMS Firstweek. There are a number of events to choose from. Details at amsfirstweek.com

UBC Recreation Open House

Sept. 8-14

Participate in free recreation classes and sample the many ways you can stay active at the UBC Rec Open House. Details at recreation.ubc.ca

Imagine UBC

Sept. 8, full day, various events around campus.

A one-day orientation for new and returning students. Visit UBC Events and Student Services to see how you can get involved and to find out about upcoming events.

SAVE THE DATE
PPC'S 30th ANNIVERSARY
May 2016

This past June, the Centre bid farewell to three of its prominent researchers. Dr. Subhashini Vashisth now joins Eastman Chemicals in a R&D role, Kingsport, Tennessee, USA; Dr. Nuwan Sella Kapu joins FPInnovations in a scientist role in Pointe Claire, QC; and Dr. Sadaf Shafiei-Sabet will join a local downtown Vancouver firm. Congratulations and Good Luck!

Social Media



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Thanks for all your TWITTER support. Below we share a few of our recent tweets:

UBC Pulp & Paper Centre @ubcPPC 12 JUN
UBC Student Session at PacWest now underway. "Effects of Chitosan on properties of paper" by Dr. Khan up first.

UBC Pulp & Paper Centre @ubcPPC 11 JUN
Why reducing variability is now more important than ever by Lahoucine Etableb of @fpinnovations #PacWest

UBC Pulp & Paper Centre @ubcPPC 11 JUN
"Leveraging our Competitive Advantage" forum at #PacWest in Whistler, BC (photo)

UBC Pulp & Paper Centre @ubcPPC 13 APR
First day of API Course, full house! Dr. James Olson talks Natural Resources and Mechanical Pulping @ubcengineering (photo)

Contact

To submit items to PPC's Pulp Digest or to join our mailing list, please contact Anna Jamroz, PPC Communications Coordinator at: anna.jamroz@ubc.ca

