Pulp and Paper Centre's

Pulp Digest

May 2014

New Faces

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

Sadaf

Sadaf Shafiei Sabet

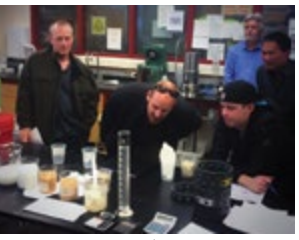
Dr. Sadaf Shafiei Sabet joins the PPC as a postdoctoral reserach fellow. She will work on the development of micro-fiber products under the supervision of Professors James Olson and Mark Martinez. Sadaf graduated with a PhD in Chemical and Biological Engineering at UBC where she worked on the rheology of cellulose nanocrystal (CNC) suspensions. She also holds a M.Sc. degree in Polymer Engineering, Nanotechnology from Amirkabir University of Technology, Tehran, Iran

David

David MJ Houghton

A graduate technologist in Chemical and Environmental technology from BCIT, David brings experience from BC's mechanical pulp industry and emerging dissolving pulp research. During the summer he will be working with Dr. Yonghua Li's research group on the biomass gasification in dual fluidized bed. He is under the supervision of Professor Xiaotao Bi, and currently an undergraduate student in Chemical and Biological Engineering at UBC.

API Course



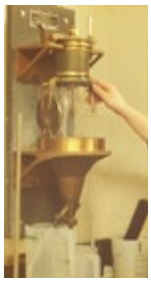
Comparing pulp consistencies

Handsheets made by students

Discussing all-things plates

The Advanced Papermaking Initiative (API) at UBC sponsored a successful 2-day course on "Introduction to Pulp and Paper Technology" on April 10th and 11th. 18 students from BC Hydro, Alberta Newsprint Co., and Spraying Systems Co. attended the hands-on course. It was structured in a way to emphasize learning outcomes and consisted of lectures in the mornings followed by lab exercises in the afternoons to re-emphasize material and enhance understanding of the processes.

The course covered an array of units. Natural Resources gave an overview of forests native to Canada, types of trees and their structures, cells, lignin and various extractives. The Mechanical Pulping unit discussed topics that ranged from chip screening to refining equipment. Stock Preparation & Pulp Processing discussed various technology in detail and included power saving strategies that can be utilized by industry. Kraft Pulping included lectures on chemical pulping, chemical recovery and bleaching – sometimes chemistry intensive, as with the Papermaking Chemistry unit, but the students kept up fine. Mark Martinez, API and PPC Director, gave an overview of Papermaking that included historical facts and detailed information on the modern papermachine. Since half of the students were visiting from mills, they found this unit especially thrilling. James Olson,



Above: measuring freeness and paper thickness

Reading test results

Associate Dean of Research at Applied Science, gave the final lecture on the future of bio-products and the bio-economy. Arguably the most popular until of the course was the time spent in the labs with Nici Darychuk as Instructor. Different pulp grades were tested for consistency, freeness and fibre length, and each student had the opportunity to make their own handsheets. Handsheets were then tested for optical and physical properties of interest using standard methods and equipment. The group also had a chance to view pressure screens and visit PPC's low consistency refining pilot plant.

For more information or to register for the next course, please visit the API website at www.ppc.ubc.ca/API

Catalyst Paper

Pictured: Visitors from Catalyst Paper were joined by over 10 Professors from a variety of departments to discuss research and collaborations
Photo: Anna Jamroz

On April 28th, the Pulp and Paper Centre welcomed guests from Catalyst Paper ranging from Process Engineers to the Director of Energy. In this inaugural "Information Day", Professors from Chemical and Biological Engineering, Mechanical Engineering, Department of Chemistry, and from the Department of Wood Science in Forestry gathered together for thoughtful discussions and spent the day presenting research on topics ranging from UBC's Bio-economy network, Energy Reduction in Mechanical Pulping program at the Pulp and Paper Centre, the forest products biotechnology/bioenergy group in Forestry, and using catalysis to access value-added forest products.

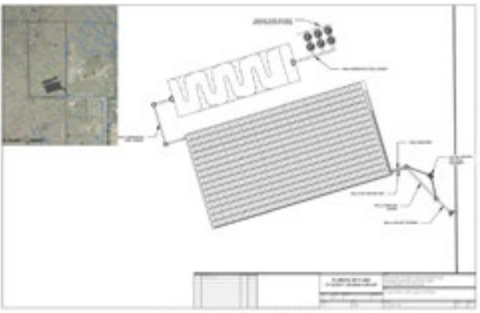
It was a day filled with information on advanced research conducted at UBC and served as a back-drop to an innovation strategy that Catalyst Paper is preparing. UBC has various options for industry to partner with researchers ranging from Discover Grants with NSERC, I2I's, and Industrial Research Chairs, to name just a few. We were happy to have James Olson, Associate Dean of Research and Industrial Partnerships at the Faculty of Applied Science join the meeting to elaborate on the benefits and the value collaborations with UBC's research centers can bring to industry.
If you are interested in starting a similar conversation, please contact the PPC Director or Communications Coordinator at ppc.info@ubc.ca

Awards & Achievements

Pictured: Hafiz Rahman, 2014 recipient of the UBC Killam Graduate TA Award.

Killam Graduate Teaching Assistant Award

Hafiz Raham, PhD candidate in Chemical and Biological Engineering, has been selected as a recipient of the 2013/14 UBC Killam Graduate Teaching Assistant Award in recognition of the valuable role that he plays in the undergraduate program and the positive impact he has left on his students. This is a great honour as UBC is home to over 2,000 TA's. Hafiz has been working at the Pulp and Paper Centre under the supervision of Professors Xiaotao Bi, John Grace and Jim Lim since 2011. He has been involved with the Dual Fluidized Bed Gasification Project in PPC's High-Head Lab.



Pictured: Portion of FloBeau's plan designs created in AutoCad.

2014 Annual Student Design Competition

UBC's undergraduate design team *FloBeau* recently won the 2014 Annual Student Design Competition held by the BC Water and Waste Association (BCWWA). PPC's newest researcher, David MJ Houghton is part of the team that also includes four students from Environmental Engineering. The BCWWA tasked the group to design an innovative storm water management process that would simulate the pre-development natural processes. The design used innovative storm water management strategies with both new and old technologies to provide clean base flow water to Star Creek even after the catchment is developed. They are being recognized at BCWWA's annual conference held in Whistler this May and will be advancing to compete at the Water Environment Foundation's annual conference held this year in New Orleans, Louisiana.

PPC Safety Inspection Award

Ata Sina is the latest recipient of PPC's Safety Inspection Award. Granted four times a year by George Soong, Safety & Operations Officer, the award encourages PPC occupants to keep their lab area neat, tidy and safe.
The next safety inspection is scheduled for July and will focus on chemical inventory and Material Safety Data Sheet (MSDS) updates.

Low Consistency Refining Lab

Pictured: Low Consistency Refiner donated by AIKAWA/ Advanced Fibre Technologies Inc. The state-of-the-art equipment is an ideal size for industry focused, university research. It is large enough to reproduce industrial refining performance while being small enough to enable relatively small amount s of pulp to be used.
Photo: Anna Jamroz

Did you know that the Pulp and Paper Centre is home to the Low Consistency Refining Lab? Low consistency refining is the primary industrial method of improving chemical pulp quality and provides significant energy savings in mechanical pulp production. All PPC researchers are welcome to join the group and anyone interested in the research is encouraged to browse the website at www.lcrl.ppc.ubc.ca. The LCRL website was initiated as a resource for researchers dealing with low-consistency refining, and for new LC refining researchers looking for excellent start up material. The private members section includes information on resources, weekly meeting schedule, training manuals, technical reports, a schedule of social events and more. The research group also holds bi-weekly low-consistency informal group meetings (LIGM) and dates of these can also be found online.

To sign up, simply visit the website and fill out your information.

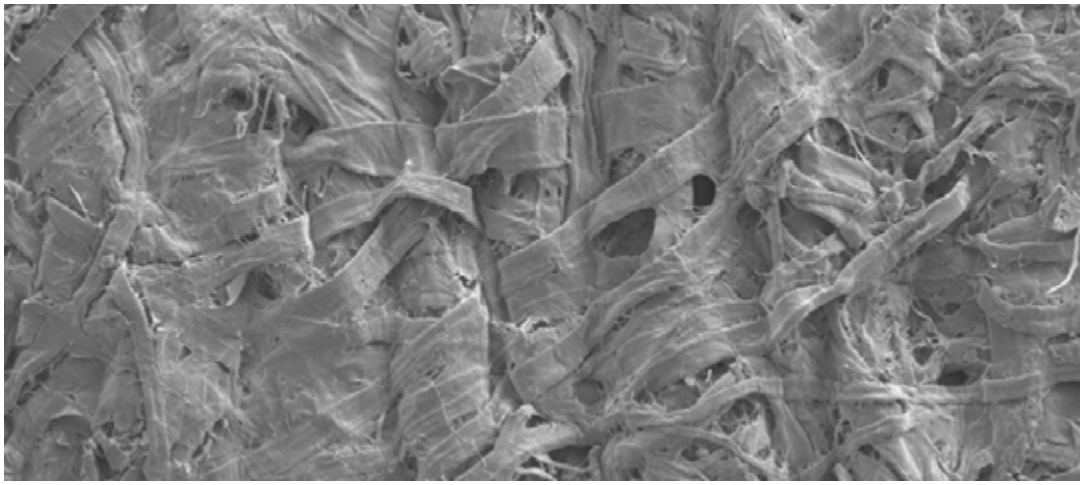
PPC Summer Safety

Appropriate Summer Clothing in Research Facilities:

During the summer season some of the research space at UBC becomes quite warm as some facilities do not have air-conditioning systems. Lab personnel may desire to offset the higher temperatures by wearing shorts and sandals; however such choices pose significant safety risks and are prohibited by regulation. Safer options include taking more frequent breaks, utilizing fans, choosing lighter weight garments or alternative working hours. The discomfort of an unpleasantly warm workplace pales in comparison to that experienced when one is exposed to toxic and hazardous materials. Appropriate clothing in laboratories includes closed-toe substantial footwear, pants and lab coat.
For further guidance please see Sections 8.8 through 8.10 of the BC Occupational Health and Safety Regulations or contact George Soong, Safety & Operations Officer at the PPC.

Guess the photo

Can you guess what the image below is? We will reveal the answer in next month's issue of *PPC's Pulp Digest*.



Mitacs

Mitacs Globalink Research Internship – Recruit an exceptional international student

Currently in its sixth year, the Research Internship is accepting faculty applications for summer 2015. Faculty supervise international senior undergraduates who travel to Canada to undertake research projects of mutual interest.

- 12-week research internship in summer 2015
- Open to professors in all disciplines
- Open to interns from Brazil, China, India, Mexico, Saudi Arabia, Turkey and Vietnam
- Mitacs oversees matching and travel logistics and provides student funding
- Competitive process for interns
- Submission deadline for faculty projects is June 18, 2014

Globalink Graduate Fellowship – Encourage international students to return to Canada

The Fellowship provides funding for Research Internship alumni to return to Canada for graduate studies.

- $10,000/year for one to three years of study in a research-based program
- Attractive incentive for those top-ranked students returning to Canada

NEW! Mitacs Globalink Research Award – Help students conduct research outside Canada

Recently launched, the Research Award helps faculty and students at Canadian universities deepen the research links between Canadian and international educational institutions.

- Up to $5,000 for student travel expenses from Canada
- 12- to 24-week research projects at accredited universities in Brazil, China, India, Mexico, Turkey or Vietnam
- Open to full-time senior undergraduate & graduate students
- Open to all disciplines
- Contact international@mitacs.ca for more information
- Mitacs recommends applicants submit applications by June 13, 2014, for projects starting in September 2014

Upcoming Seminar

"Honeywell's Control Technologies for Papermaking"

Tuesday, May 20 12:00-1:00pm Chemical & Biological Engineering, Room 202 (2360 East Mall)

Honeywell is a Fortune 100 company that invents and manufactures technologies to address some of the world's toughest challenges linked to global macrotrends such as energy efficiency, clean energy generation, safety and security, globalization and customer productivity. Honeywell employs approximately 132,000 employees worldwide, of which more than 22,000 are engineers and scientists. At Honeywell's Vancouver Center of Excellence, over 150 people, including 60 scientists and engineers with advanced degrees, are employed in R&D, sales, and manufacturing of software and hardware products for the pulp and paper, and automotive industries. Paper machine control has a unique set of challenges: relatively long and variable process time delays, hundreds of measurements and actuators, and both machine direction (temporal dynamics) and cross direction (spatial dynamics) components. This talk will discuss approaches to overcoming these control challenges from the perspective of a leading global industrial technology supplier.

Speaker: Michael G. Forbes, Ph.D., P.Eng. received his B.Sc. degree in the Process Control option of the Mathematics and Engineering program at Queen's University in 1998 and his Ph.D. in Process Control from the University of Alberta in 2003. In 2005 he joined Universal Dynamics, now ANDRITZ Automation, in Vancouver. Michael spent five years with Universal Dynamics working in an applications engineering role in which time he commissioned over 20 advanced control solutions for processes such as mineral processing, plastics manufacturing, and pulp production. In 2010 Michael moved to Honeywell Process Solutions to take the position of Control Research Engineer. Since joining Honeywell, he has worked on advanced solutions for paper machine controls. He is a registered professional engineer in B.C. Canada.

Upcoming Events

APSC Inaugural Professorial Lecture Series
May 5, 5:00-7:00pm, Fred Kaiser Building, Room 2020
The Inaugural Professorial Lecture Series is hosted by Dr. Marc Parlange, Dean at UBC Faculty of Applied Science and Dr. Sheldon Green, Head of Department of Mechanical Engineering. It begins with the following two lectures:
"MEMS Technology and Biomedical Microdevices"
Dr. Mu Chiao, Professor
"What I've Learned about Learning: A Few Simple Ideas that have Changed How I Teach"
Dr. Peter Ostafichuk, Professor of Teaching

FIBRE Conference
May 12-15, various locations, UBC
FIBRE participants from the eight participating networks and delegates from industry, government, invited guests and conference registrants will partake in an exciting four-day program. **Volunteers needed!** More info can be found on www.fibrenetwork.org/events/event2014/

MECH summer lab tours
May 15, between 12:30-2:00 pm (July 9 and August 12)
The Mechanical Engineering Department annually hosts guided lab tours for high school students, first year students, incoming MECH students, or anyone interested in mechanical engineering, to show them what the MECH department is all about and to give them an idea of what kind of research mechanical engineers do. Email to RSVP: studentassistant@mech.ubc.ca

UBC Vancouver Graduation
May 21-23/May 26-28, Chan Centre for the Performing Arts
Congratulations to all UBC graduates! Wishing you much success in your future endeavors. Visit www.graduation.ubc.ca for check-list, schedule, family & guest info and more.

Alumni Weekend 2014
May 24
If you're looking for the most fascinating, entertaining and intellectually stimulating day of the year, come to the Vancouver campus for UBC Alumni Weekend. With dozens of activities to choose from, you're sure to have a great day! Visit www.alumni.ubc.ca/alumniweekend to RSVP and for a list of events.

PACWEST
May 28-31, Jasper, AB
Six PPC researchers will be presenting technical papers and presentations at the upcoming PACWEST Conference with a theme of "Improving Mill Results – Keys for Success". Several others will also participate in the poster session. More info can be found on www.pacwestcon.net

Energy Reduction in Mechanical Pulping Steering Committee Meeting
May 28, 8:00-5:00pm, Fairmont Jasper Park Lodge
The Energy Reduction research group will be joined by its industry partners at the Steering Committee meeting in Jasper, AB. For more information, contact Anna at anna.jamroz@ubc.ca

Social Media

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Visit us online: www.ppc.ubc.ca

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

UBC Pulp & Paper Centre @ubcPPC 28 APR
The PPC welcomes @catalystpaper for full-day of innovative research presentations @ubcforestry @UBCChemistry @ubcappscience @ubcengineering

UBC Pulp & Paper Centre @ubcPPC 22 APR
Happy #EarthDay2014 "Recycle less" says @QueenofGreen Pay attention to what you are buying and putting in your blue bin. RE-USE instead

UBC Pulp & Paper Centre @ubcPPC 17 APR
Brooklyn Museum "Submerged Motherlands" exhibit now open. Amazing instillation featuring paper (photo)

UBC Pulp & Paper Centre @ubcPPC 11 APR
Prof Robert Gooding shows various rotors and screens used in pulping process (photo)

UBC Pulp & Paper Centre @ubcPPC 10 APR
Students of the Intro to Pulp and Paper Technology course seen comparing consistencies at the lab (photo)

UBC Pulp & Paper Centre @ubcPPC 9 APR
The @ubcengcoop gang stopped by the PPC labs to learn how to make paper and have some fun today! @ubcengineering

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