The Department of Wood Science & Forest Products at Virginia Tech
Volume 3 Issue 12 — Monday, April 7, 2008

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Inside VT Wood

News From Paul Winistorfer

- Our Graduate Student Seminar presenter this week is Angela Zhou, MS candidate working with Dr. Scott Renneckar. The title of her presentation is "Nano-coating on wood veneers for adhesion and durability". Please join us at 9:00 a.m. on Friday morning in the Brooks Classroom.
- I will be scheduling and holding senior exit interviews during the month of April with our graduating students. We continue to glean useful feedback from our students that we keep under consideration in our discussion of 'how to make our program better'.
- I will be participating with the Virginia Economic Development Partnership this week at they host the wood products media tour all week across the state. Wood industry trade press editors are hosted by Mike Sexton (wood products – VDEP) to learn of the industry in our state. I will participate with the group when they arrive in Danville and will be presenting an update on our educational pathways model that is evolving in state, as well as our program at Virginia Tech.
- Inside VT Wood was first published April 10, 2006. In the past two years our internal electronic newsletter has become part of our culture. Submissions now come from across the department and we continue to insert relevant materials from the industry, as well as job postings. Our graduate student spotlight was added during this academic year. We have a significant 'subscriber list' and news of our program reaches around the world. A special thanks to Will Pfeil for his continued layout and design of Inside VT Wood. Will's work in our department is of exceptional quality. All past issues of Inside VT Wood are posted to our department website under the publications link.

Scholarship Application Deadline is May 15th

Our department scholarship application deadline is May 15th, for scholarships to be awarded effective fall 2008. Application may be made on line. You can find our downloadable application form, and link to the online application on our department website at http://www.woodscience.vt.edu/students/scholarships/scholarlist.asp?type=1

Notification is made during the summer, and students are recognized at our Wood Week Scholarship Recognition Reception. The reception is scheduled for September 17th , 2008 at the Inn at Virginia Tech.

Wood Week 2008 Career Fair Registration is Now Live

Wood Week 2008 is set for the week of September 15, 2008. Our Career Fair is Thursday September 18, on the Drillfield of the Virginia Tech campus. We have increased our capacity this year to 75 companies. Registration is now live and linked from the Wood Week 2008 link on our homepage. Please help spread the word on the career fair and help us reach our goal of 75 participating firms this year.

IOPP Hosts Glass Packaging Institute Educator, Rick Bayer

The Institute of Packaging Professionals (IoPP) club at Virginia Tech had an exciting week. Thursday, March 27, the club hosted Rick Bayer, an educator from the Glass Packaging Institute. Rick is well known with the packaging programs across the country. It was nice to get VT on his agenda. He presented in the Brooks classroom from 5-7pm.

Friday, the club was invited to tour an Owens-Illinois (O-I) beer bottle manufacturing facility in Danville, VA. It was a great learning experience for all that went along. Thanks for your participation in these events.

CAD Table Dedication and Ribbon Cutting Ceremony

On Thursday, April 3, 2008, in conjunction with the Center for Unit Load Design's Advisory Board meeting, the center held the CAD Table Dedication and Ribbon Cutting Ceremony at Brooks. The program kicked off with remarks from Ralph Rupert and Paul Winistorfer, followed by comments from Richard Flaherty, president of the International Corrugated Packaging Foundation (donor of the table), and Ryan Anthony, a senior in packaging science. The program ended with a traditional ribbon cutting ceremony, with the cutting honors going to Andrew Jackson, a freshman packaging student, and table demonstration by Ralph Rupert. The program was followed by lunch at the Inn, then an afternoon meeting of the center's advisory board.

Ribbon cutting ceremony during dedication of a CAD table donated to Virginia Tech by the International Corrugated Packaging Foundation. Front row: Dwight Schmidt, Fibre Box Association; Richard Flaherty, ICPF; Andrew Jackson (cutting ribbon), Virginia Tech Packaging Science student; Steve Gore, Data Technology, Inc.; Paul Winistorfer, VT Wood Science and Forest Products department head; Mike Kelly, VT Dean of the College of Natural Resources. Others in attendance; The Center for Unit Load Design and CULD Advisory Board, VT students. Photo by Will Pfeil.

GRADUATE STUDENT SPOTLIGHT

Yu (Angela) Zhou
M.S. Candidate

Hello, I am Yu (Angela) Zhou, a 2nd year MS student. Currently I am working with Dr. Renneckar and doing research on applying a novel surface modification technique, layer-by-layer assembly, to wood veneers, which will be used as an adhesion to make plywood. This technique involves the adsorption of oppositely charged polymers, polyelectrolytes, in sequential adsorption steps to yield a multilayer film with a defined layer sequence on a given substrate. I'm currently interested in studying how some parameters, like solution conditions, will affect the adsorption of polyelectrolytes onto wood surfaces, and the bonding strength of coated veneers that have opposite charged terminal layers created using the general plywood manufacturing procedure.

I was born in Guilin, a small city in the South of China that is surrounded by mountain and rivers. As the only child in my family, and also the first born granddaughter in our big family, I grew up with tons of happiness and much attention from my relatives. My father and aunt worked in a factory that produced ceramic tiles, so the plants had big machines running and the research lab where people could play magic shows turned to be my play ground throughout my childhood. And at that time, I would never image that my future study would be related to the wood industry, an area that has so many similarities with the jobs my father and aunt had done years ago.

I was, or I was always trying to be a good student since I attended elementary school. Thanks to the great support and education from my parents, I successfully graduated from high school in our town and was admitted to the Beijing Forestry University for higher education and study in wood science. During my four year undergraduate study, I was deeply impressed by the programs provided in our department. We studied fundamental wood science, manufacturing of wood products, basic wood products marketing and management, and even the furniture and interior design, which could be said as an amusement for me, because one of my hobbies is scratching and drawing.

Prior to getting my Bachelor's degree, I decided that I would study aboard. And at that time, the wood science program at Virginia Tech caught my attention with great interests, so I decided to apply. You might not image how happy I was when I received the offer from Virginia Tech, and also how complicated it was to think about leaving my family to go study on the other side of the world.

The first half year after I came here, I was surprised almost everyday by something new, and even now, I am still learning, and trying to get accommodated to the different environment. But I am very pleased living here. People are all very kind, and warmhearted. Without their help and support, I think I would have been struggling and had difficulties during the past two years.

I love singing and dancing, and for the past sixteen years, from elementary to university, I was always active in the Student Dance Club at School, performing in many dance appearances. I like dogs and hope to be able to have several different breeds in the future.

235th ACS National Meeting & Exposition

Wood Science faculty (Kevin Edgar, Wolfgang Glasser, Scott Renneckar, and Maren Roman) and graduate students (Jung Ki Hong, Richard Johnson, Fernando Navarro, and Hezhong Wang) to participate in the spring national meeting of the American Chemical Society.

235th ACS National Meeting & Exposition
April 6-10, 2008
New Orleans, Louisiana, USA

Oral presentations:

Effects of fiber size and size distribution on performance of cellulose-reinforced composites

Richard K Johnson, rijohns6@vt.edu, Audrey Zink-Sharp, azink@vt.edu, and Wolfgang G. Glasser, wglasser@vt.edu. Department of Wood Science and Forest Products (0323), Virginia Tech, Blacksburg, VA 24061

Cellulose nanocrystals for targeted drug delivery applications CELL 30

Maren Roman, Shuping Dong, Anjali A. Hirani, and YongWoo Lee

(1) Department of Wood Science and Forest Products, Virginia Tech, 230 Cheatham Hall (0323), Blacksburg, VA 24061

(2) School of Biomedical Engineering and Sciences, Virginia Tech, 1121 Research Building XV, 1880 Pratt Drive, Blacksburg, VA 24061

Assembly and characterization of lignin nanostructured films and xylan nanoparticles

Scott Renneckar, srenneck@vt.edu1, Karthik V. Pillai1, Darren Riedlinger1, and Alan R. Esker2. (1) Department of Wood Science and Forest Products, Virginia Tech, Blacksburg, VA 24061, (2) Department of Chemistry, Virginia Polytechnic and State University, 1107 Hahn Hall, Blacksburg, VA 24061-0212

Adsorption of hydroxypropyltrimethylammonium xylan onto self-assembled monolayers and model cellulose surfaces

Abdulaziz Kaya, akaya@vt.edu1, Daniel A. Drazenovich, ddrazeno@vt.edu1, Wolfgang Glasser, wglasser@vt.edu2, Katrin Scwikal, Katrin.schwikal@web.de3, Thomas J. Heinze, coh@uni-jena.de3, and Alan R. Esker, aesker@vt.edu1. (1) Department of Chemistry (0212), Virginia Polytechnic Institute and State University, Blacksburg, VA 24061, (2) Department of Wood Science and Forest Products (0323), Virginia Polytechnic Institute and State University, Cheatham Hall, Blacksburg, VA 24061, (3) Institute of Organic and Macromolecular Chemistry, Friedrich Schiller University, Humboldtstrasse 10, Jena, D-07743, Germany

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Adsorption behavior of pullulan derivatives onto regenerated cellulose surfaces via surface plasmon resonance spectroscopy

Zelin Liu, liu05@vt.edu1, Abdulaziz Kaya, akaya@vt.edu1, Wolfgang Glasser, wglasser@vt.edu2, and Alan R. Esker, aesker@vt.edu1. (1) Department of Chemistry (0212), Virginia Polytechnic Institute and State University, Blacksburg, VA 24061, (2) Department of Wood Science and Forest Products (0323), Virginia Polytechnic Institute and State University, Cheatham Hall, Blacksburg, VA 24061

Poster Presentations:

Polyelectrolyte complex formation between cellulose nanocrystals and chitosan CELL 43

Hezhong Wang and Maren Roman Department of Wood Science and Forest Products, Virginia Tech, 230 Cheatham Hall (0323), Blacksburg, VA 24061

Micropatterning of cellulose nanocrystals by ink-jet printing CELL 103

Fernando Navarro and Maren Roman Department of Wood Science and Forest Products, Virginia Tech, 230 Cheatham Hall (0323), Blacksburg, VA 24061

Cellulose nanocrystals as additives for wood adhesives CELL 126

Jung Ki Hong, Charles E. Frazier, and Maren Roman Department of Wood Science and Forest Products, Virginia Tech, 230 Cheatham Hall (0323), Blacksburg, VA 24061

WoodLINKS Canada on YouTube

WoodLINKS Canada has put a 6 minute video clip of WoodLINKS Canada on YouTube. WoodLINKS Canada is managed by the Wood Manufacturing Council of Canada.

http://www.wmc-cfb.ca/test-video.htm

The Amazing Expanding Table

You'll be amazed to see technology and precision in action. See the amazing expanding table here http://www.dbfletcher.com/capstan

CALL for PAPERS, POSTERS, and EXHIBITS for OUTREACH NOW 2008

The Promise of Campus–Community Partnerships: Learning Through Student Engagement will be held on Monday, September 8, at the Inn at Virginia Tech and Skelton Conference Center.

You are invited to submit an abstract for a presentation, poster, and/or exhibit. Additionally, we are asking that you forward this notice to any students, community members, or staff members that you have partnered with and invite their submissions as well. The entry deadline is April 10.

This year's theme reflects Virginia Tech's goal of working with stakeholders to become more actively engaged in creating economic and social impact in local communities in Virginia and around the world while supporting student learning.

This fourth annual conference features Tim Kaine (invited), Governor of the Commonwealth of Virginia, as keynote speaker; an awards ceremony acknowledging outreach scholars; presentations; exhibits and poster session; and a networking event at 4:30 p.m.

The afternoon conference starting at 1:00 p.m. will call us to strengthen the relationships with our local, regional, and international communities and to renew our commitment to enhancing the student experience through a focus on experiential learning, service-learning, internships, externships, cooperative education experiences, education abroad, student and community-based research and projects.

To submit your abstract or to learn more about the conference, visit:
http://www.opd.vt.edu/outreachnow/

Sponsored by the Office of the Vice President for Outreach and International Affairs and the Commission on Outreach and International Affairs

Job Announcements

Production Management Trainee – Moulding & Millwork

North America's largest manufacturer of moulding and millwork products is seeking several qualified individuals to help meet our expansion plans. Moulding and Millwork is a rapidly growing division of Sauder Industries with 8 mills and 37 wholesale distribution centers. Our well established training program provides the necessary tools needed to lead the individual to a career in management. We have been in the wood products business for over 80 years and have a proven track record of providing outstanding career advancements and opportunities throughout the US and Canada.

Qualified candidates should possess the following:

- Strong interest in management and production

- Desire to learn
- Excellent communication and interpersonal skills
- High energy and initiative
- Motivation to excel in upper management positions
- Bachelors degree in Forest Products, Industrial Engineering, or Business Management
- Production experience is desired, but is not essential

In addition to a competitive salary, our compensation package includes:

- A complete medical plan
- A liberal company matched 401K retirement plan
- Performance based profit sharing paid annually
- Paid annual vacation within first year of employment

For more information about these exciting opportunities please contact:
Travis Allen at tallen@mouldingandmillwork.com

See our website at http://www.mouldingandmillwork.com

Sales Management Trainee – Moulding & Millwork

North America's largest manufacturer of moulding and millwork products is seeking several qualified individuals to help meet our expansion plans. Moulding and Millwork is a rapidly growing division of Sauder Industries with 8 mills and 37 wholesale distribution centers. Our well established training program provides the necessary tools needed to lead the individual to a career in management. We have been in the wood products business for over 80 years and have a proven track record of providing outstanding career advancements and opportunities throughout the US and Canada.

Qualified candidates should possess the following:

- Strong sales interest
- Desire to learn
- Excellent communication and interpersonal skills
- High energy and initiative
- Motivation to excel in upper management positions
- Bachelors degree in Forest Products, Business Management, or Marketing

In addition to a competitive salary, our compensation package includes:

- A complete medical plan
- A liberal company matched 401K retirement plan
- Performance based profit sharing paid annually
- Paid annual vacation within first year of employment

For more information about these exciting opportunities please contact:
Travis Allen at tallen@mouldingandmillwork.com

See our website at http://www.mouldingandmillwork.com

Product Engineering Intern – Tarkett

Department: R&D
Reports To: R&D Manager
FLSA Status: Non-exempt
Prepared By: Sandy Westelaken
Prepared Date: 4/3/07

Summary

Provides engineering support for all aspects of assigned product line to ensure functionality, quality, cost, and schedule by performing the following duties.

Essential Duties and Responsibilities include the following. Other duties may be assigned.

- Assists with the development of the product design and functionality.
- Implements the product design within the schedule and budget parameters.
- Identifies any problems with the implementation or available resources that may affect the schedule or budget and communicates such problems accordingly.
- Analyzes the risks of a new design or process and communicates results to project engineer.
- Provides support to manufacturing to ensure product is fabricated and assembled based on the intended functionality of the design.
- Develops and maintains procedures and processes that support core machine technologies.
- Interfaces with others in the organization and customers to jointly determine customer needs and solutions.

Qualifications

To perform this job successfully, an individual must be able to perform each essential duty satisfactorily. The requirements listed below are representative of the knowledge, skill, and/or ability required. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

Education and/or Experience

Bachelor's degree (B. A.) in progress in relevant discipline from four-year college or university.

Language Skills

Ability to read, analyze, and interpret general business periodicals, professional journals, technical procedures, or governmental regulations. Ability to write reports, business correspondence, and procedure manuals. Ability to effectively present information and respond to questions from groups of managers, clients, customers, and the general public.

Mathematical Skills

Ability to apply advanced mathematical concepts such as exponents, logarithms, quadratic equations, and permutations. Ability to apply mathematical operations to such tasks as frequency distribution, determination of test reliability and validity, analysis of variance, correlation techniques, sampling theory, and factor analysis.

Reasoning Ability

Ability to solve practical problems and deal with a variety of concrete variables in situations where only limited standardization exists. Ability to interpret a variety of instructions furnished in written, oral, diagram, or schedule form.

Computer Skills

To perform this job successfully, an individual should have knowledge of Design software; Project Management software; Spreadsheet software and Word Processing software.

Physical Demands:

The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

While performing the duties of this Job, the employee is regularly required to talk or hear. The employee is frequently required to stand; walk; sit and use hands to finger, handle, or feel. The employee is occasionally required to reach with hands and arms; climb or balance and stoop, kneel, crouch, or crawl. The employee must regularly lift and /or move up to 10 pounds, frequently lift and/or move up to 25 pounds and occasionally lift and/or move up to 50 pounds. Specific vision abilities required by this job include close vision, distance vision, color vision, peripheral vision, depth perception and ability to adjust focus.

Work Environment:

The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

While performing the duties of this Job, the employee is frequently exposed to wet and/or humid conditions; moving mechanical parts; fumes or airborne particles and toxic or caustic chemicals. The employee is occasionally exposed to high, precarious places; outside weather conditions; extreme heat; risk of electrical shock and vibration. The noise level in the work environment is usually moderate.

Sales Representative – Royal Wood Shavings

Growing manufacturer of bedding for horses is looking for a dynamic and motivated person to develop sales and customer loyalty for the equestrian market in 11 states.

The selected applicant must demonstrate the following skills :

- Work as a team
- Faculty of prioritization , of organization and of methodology
- Ability to communicate and negotiate effectively
- Capable of listening and having empathy for the customer
- Analytical mind to solve problems effectively and diplomatically
- Proactive, capable of managing and achieve goals
- Autonomous and rigourous

A college or university formation would be an asset. Minimum of 3 years experience in a similar job. Knowing the Windows environment. Knowledge of the equestrian field. Must have a driver's license and a car to travel.

Full time position. $35 000-40 000 salary + car allowance + performance bonus.

Send resume by email : eric.fortin@royalwoodshavings.com

Or by fax : (418) 831-6505

Plywood Division – Atlantic Veneer

It is an honor to graduate from a prestigious program and a respectable university such as Virginia Tech. It is even more of an honor to be able to work in the field that you have spent so much time and effort on through the last several years of your life.

My name is Mason Talley and I am one of the Production Managers at Atlantic Veneer Corporation in Beaufort, NC. I am a graduate from NC State University in the Wood Products Program and work with four other Wood Products graduates on a daily basis.

We are seeking individuals that are eager to work, learn and want to be well respected in the wood industry. Atlantic Veneer currently has mills in North Carolina, Estonia, Balti-Spoon and Germany, so you will have great opportunities to learn and visit domestic and international operations. There is great potential to quickly move up in this company as I have been here for only three years and now manage 65 people in the manufacturing process of Hardwood Plywood.

You will go through a planned out managerial trainee program in which you will learn the following:

1. Manufacturing Process of Hardwood Plywood
2. Grade and Species of Domestic and Tropical Veneers
3. Different core types that are used in the process
4. Sales and Marketing
5. Multitasking
6. Managing People

If you are interested in or have questions about perusing a career here on the coast of North Carolina, please send me a resume to the below e-mail address and I will contact you to set-up an interview. I have attached some information about our company and the Moehring Group. Thanks for your time and consideration.

Mason Talley
Production Manager (Plywood Division)
mtalley@moehring-group.com
252-728-8654 (office)
252-723-9233 (cell)

Student Wood Enterprise Institute
WOOD 2984, CRN 61782
Summer '08

What is the Student Enterprise?

- ✓ A chance to experience what you learn in class by making it work in a real business enterprise situation
- ✓ A chance to develop skills not typically taught in the classroom
- ✓ A chance to fine-tune your time management abilities
- ✓ A chance to learn how to teach things you know to those who don't
- ✓ A chance to build your resume, build a portfolio, and showcase your abilities in more visible ways in a variety of outlets
- ✓ A chance to deal with problems, understand their root cause, and to develop appropriate countermeasures.
- ✓ A chance to learn what it really means to align business operations with market demand
- ✓ A chance to test the waters of risk, innovation, creativity, and entrepreneurship
- ✓ A chance to further build your network, both in the business world and in the academic world
- ✓ And probably most importantly, a chance for you to guide and direct your own learning experience in directions that are both meaningful and fun! The enterprise is owned by you and it is what you want to make it.

The Wood Enterprise Institute (WEI) introduces an actual wood product "concept-to-market" business project during the Summer Semester 2008. Students will continue last year's successful inaugural start-up of WEI. Learning experiences include how to improve, make, and market a wood product, organize a business to make and sell it, measure and assess key performance areas, and manage the quality of the processes necessary to sustain a profitable and timely business. Sponsoring faculty and industry representatives will interact with students throughout the project for business models, technology, and practical advice that would be necessary to sustain a competitive business venture. This study is offered as a 6 credit full summer semester course.

Next Information Meeting:
5:30pm --- Tuesday, April 1, 2008
317 Cheatham Hall

Please contact Dr. Earl Kline (kline@vt.edu) for more information about WEI.

Wood Week 2008
September 15-19, 2008

Calendar of Events

Monday
September 15th

Department Welcome Back to School Picnic
5:00 - 7:00 p.m. Hahn Horticulture Garden Pavilion

Keynote Speaker—Patrick Calello, founder of Automoblox—Kicks Off Wood Week 7:00 p.m. www.automoblox.com

Tuesday
September 16th

Wood Magic Show
Brooks Forest Products Center
www.woodmagic.vt.edu

Wednesday
September 17th

Center for Forest Products Marketing and Management Meets
The Inn at Virginia Tech

Department Scholarship Recognition and Reception Program
The Inn at Virginia Tech 6:00 - 8:00 p.m.

Thursday
September 18th

Wood Week 2008 Career Fair
Join us under the 'big top' tent in the middle of our campus for the largest University sponsored wood industry career fair in North America. We have room for 75 wood industry companies this year.

Come to Virginia Tech and recruit students from all majors for your wood industry business needs.

Registration opens April 1, 2008 at www.woodscience.vt.edu

Friday
September 19th

No activities

Virginia Tech
1872
Invent the Future

The Department of Wood Science & Forest Products at Virginia Tech
www.woodscience.vt.edu

The Department of
Wood Science & Forest Products
at Virginia Tech

Spring 2008 Seminar

Seminar meets in the Brooks Forest Products Classroom

Date-Friday 9:00 AM	Presenter	Topic
January 18	Brian Perkins Ph.D. Candidate	Modeling Factors that Influence Firm Performance of Eastern Hardwood Lumber Manufacturers
January 25	John Bouldin Ph.D. Candidate	Defects in engineered wood products in residential construction
February 1	Thammarat Mettanurak M.S. Candidate	Effect of Suppression and Release on Compression Parallel to Grain Property for Small-sized Yellow-poplar (Liriodendron tulipifera L.) Specimens
February 8	Omid Parhizkar Ph.D. Candidate	Improving the international competitiveness of U.S. sawmills to Middle Eastern markets: An assessment of market segments
February 15	Tim Stiess Ph.D. Candidate	Information Flow in the Hardwood Supply Chain
February 22	Jim Bisha M.S. Candidate	The effect of load stabilizer selection on load slip within unit loads
February 29	Alex Hagedorn Ph.D. Candidate	Identifying pallet size incompatibilities within the global supply chain
March 14	Omar Espinoza Ph.D. Candidate	Quality Measurement in a Wood Products Supply Chain
March 21	Hezong Wang Ph.D. Candidate	Polyelectrolyte complex formation between cellulose nanocrystals and chitosan
March 28	Gi Young Jeong Ph.D. Candidate	Tensile Properties of Loblolly Pine Strands Using Digital Image Correlation and Stochastic Finite Element Method
April 4	Braden White M.S. Candidate	Verification of Finite Element Model Estimates of Wooden Pallet Performance
April 11	Angela Zhou M.S. Candidate	Nano-coating on wood veneers for adhesion and durability
April 18	Ji Youn Yoo M.S. Candidate	Quantitative Analysis of the Static Stress Distributions across Pallet Decks for the Unit Loads of Selected Packaged Product Forms and Stacking Patterns
April 25	Garrett Norman M.S. Candidate	Just-In-Time Manufacturing System Design for Rough Mill Systems: A Case Study

April 30 classes end

For more information please contact the department at 540/231-8853