



KITCHENER-WATERLOO SECTION

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The Kitchener-Waterloo Section of the Institute of Electrical and Electronics Engineers serves members whose mailing address is in Bruce, Grey, Perth, Waterloo or Wellington counties. It collects news relevant to local engineers and is published bimonthly.

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<http://kw.ieee.ca>

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KW Section Executives

<http://www.ieeekw.com/executive.php>

Officers :

Chair	Dr. Amir Khatibzadeh
Vice-chair	Dr. Shahab Ardalan
Secretary	Dr. Amin Mobasher
Treasurer	Dr. Shahab Ardalan

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Professional & Publicity Activities	Vacant
Student Activities (Conestoga College)	Ms. Jane Carr
Student Activities (University of Guelph)	Vacant
Student Activities (University of Waterloo)	Dr. Siva Sivoththaman
Educational Activities	Dr. Magdy Salama
Newsletter Editor	Mr. Jameson Hyde
Nominations	Dr. Mauro Rossi
Awards	Dr. Alaa Khamis

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Antennas and Propagation (AP03) /Microwave Theory (MTT17)	Dr. Raafat Mansour
Circuits and Systems (CAS04)	Dr. Catherine H Gebotys
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Computer (C16)	Dr. Ladan Tahvildari
Control Systems (CS23)	Dr. Fakari Karray
Electron Devices (ED15)	Dr. Siva Sivoththaman
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Solid State Circuits (SSC37)	Dr. Shahab Ardalan
Systems, Man, & Cybernetics (SMC28)	Dr. Mohamed Kamel

Vehicular Technology (VT06)

Dr. Weihua Zhuang

Affinity Group Chair :

GOLD (Graduates of the Last Decade)

Vacant

WIE (Women In Engineering)

Dr. Ladan Tahvildari

Consultants Network

Dr. Shahab Ardalan

LM (Life Members)

Vacant

Student Branches :

Conestoga College Student Branch

Mr. Justin Swance

University of Guelph Student Branch

Vacant

University of Waterloo Student Branch - Stream A

Mr. Haosen Cai

University of Waterloo Student Branch - Stream B

Ms. Joanna Ma

Upcoming Events

Updated information can be found at <http://www.ieeeuw.com/activities.php>.

IEEE EPEC 2010

August 25 – 27, 2010

Halifax, NS

The objective of the IEEE Electrical Power and Energy Conference (EPEC 2010) is to provide a forum for experts in Electrical Power and Energy to disseminate their recent research outcomes and exchange views on future research directions of these fields, and to seek direct cross-fertilization in these areas. Special sessions will be organized, and renowned experts will be invited to give keynote speeches.

<http://www.ieee.ca/epec10/>

Women in Engineering Graduate Career Bootcamp

June 15, 2010

8:30AM - 5:00PM

University of Waterloo, TC2218

This all day event will feature several professional engineering women speakers; including alumni working in various industries, engineering faculty and career services. Each speaker will be offering negotiation, resume/CV, networking and interview career information. Registration is limited so please register today. Career packages and meals will be provided.

<http://www.engineering.uwaterloo.ca/wie/events.html>

IEEE UW Guest Speakers

IEEE UW Student Branch

Keep an eye on the IEEE UW Student Branch website for further details on two very exciting guest speakers that will be visiting in the fall.

Canadian astronaut, Dr. Robert Thirsk will be sharing his experiences with the American and Russian space programs and his recent involvement on the International Space Station.

A representative from Blizzard Entertainment will be returning to Waterloo for the second year to talk about products and career opportunities.

http://ieee-sb.uwaterloo.ca/upcoming_events.aspx

IEEE International Symposium on Network Coding

June 9 – 11, 2010

University of Toronto

NetCod 2010 aims to provide a forum for an in-depth coverage of the research developments of network coding up to date.

<http://www.networkcoding.org/>

IEEE International Symposium on Antennas and Propagation and CNC/USNC/URSI Radio Science Meeting

July 11 – 17, 2010

Toronto, ON

The 2010 APS/URSI Symposium is the premier international forum for the exchange of information on state-of-the-art research in antennas, electromagnetic wave propagation, radio science, and electromagnetic engineering. The symposium and meeting are co-sponsored by the IEEE Antennas and Propagation Society (AP-S) and CNC/USNC/URSI. The symposium generally attracts over 1,500 attendees from around the world.

<http://www.apsursi2010.org/>

Recent Events

KW Section's 50th Birthday

May, 2010

The Kitchener-Waterloo Section turned 50 in May. It continues to be one of the most active sections in Canada, thanks to the passion and support of the many volunteers and members that represent 12% of the Canadian membership.

IEEE UW Rogers Tour

Leah Hilts, UW Student Branch Secretary

May 19, 2010

The IEEE UW Student Branch has effectively organized a tour at the Rogers Network Hub, located in Kitchener, for both the undergraduate and graduate engineering students at the University of Waterloo. The tour was organized to demonstrate the operation of the network components that allow Rogers to deliver their wireless services. The tour was a great chance to learn the engineering behind one of Canada's largest wireless network providers.

Despite the high demand from students, we were limited to take 10 students per each of the two sessions. The majority of the registered students were from the ECE department. Half of them were graduate students.

Overall, the tour was a great success and we look to hold the tour again in the future.

23rd Canadian Conference on Electrical and Computer Engineering

IEEE Canadian Review – Spring 2010, UW Engineering News
May 2 – 5, 2010

The CCECE welcomed researchers, students and practicing professionals to Calgary, where they presented information on the latest advancements and discoveries. International attendance participated in tutorials sessions, keynote presentations, industrial exhibitions and an awards banquet.

Mohamed Kamel of electrical and computer engineering was honored with the 2010 IEEE Canada Computer Medal for outstanding contributions to pattern recognition and intelligent systems. The award was on May 3 at the IEEE Canada Awards Presentation, held during the CCECE.

The 10th Annual UW ECE Design Project Symposium

March 24, 2010

Sponsored by Infusion Development and Infusion Angels, the symposium showcased the work of over 190 senior undergraduate students in Electrical and Computer Engineering. A total of 49 interactive displays were presented.

Kickboxer Pro, an automated system for kickboxing practice won the Infusion Cup and \$2000 prize.



Students at ECE Design Project Symposium

UW Student Branch Rethink Conference

Leah Hilts, UW Student Branch Secretary
March 30 – April 1, 2010

The IEEE Student Branch hosted “Rethink: Modern Leadership and Innovation”, a speaker series featuring executives and managers from five leading technology organizations. Speakers were as follows:

- Alfred Spector, VP Research and Special Initiatives, Google
- Joseph Facca and Terry Laviolette, Directors, AMD
- Paul Smith, Lab Manager, Xerox Research Centre of Canada
- Peter Tang, VP Innovation, ATS
- Robert Hardt, SVP Industry, Siemens Canada

These high-profile guests spoke offered a high-level look into innovation at their respective companies. In particular, speakers tended to focus on new technologies, such as floating wind turbines at Siemens, and on the management of technology-related processes, such as how AMD handles up to four generations of graphics chips simultaneously. The speeches were very interactive and well received by the audience, consisting mainly of undergraduates and graduates in Math and Engineering programs.

The IEEE UW Student Branch is looking forward to having some of these excellent companies come back to talk about different topics in the near future.

Further information and the recorded presentations can be found on the Student Branch website.

http://ieee-sb.uwaterloo.ca/rethink_2010.aspx

Technical Project Review

Leah Hilts, UW Student Branch Secretary
April 24, 2010

Over the last term, the Humanoid Robotics Team was working hard on completing their first project. It is a bipedal remote control robot for the Mech Warfare competition in the RoboGames in San Mateo, CA. After months of relentless work (even during their exam periods), a group of five people from the team flew to San Mateo to attend the competition. Although the robot was experiencing some problems with power issues and some balancing issues, the members have learned immensely through all their efforts and time put into the project and are looking forward to redesign the robot to enter the competition again next year.

Engineers and the World

'Consultation' on the Digital Economy

UW Daily Bulletin
May 11, 2010

The Government of Canada today unveiled a national consultation aimed at building consensus among governments, the private sector, academia and the Canadian public in developing a digital economy strategy for Canada. The commitment to developing the strategy was outlined in both the government’s Speech from the

Throne and Budget 2010 and is aimed at positioning Canada for leadership in the global digital economy.

The consultations, which begin today and close on July 9, 2010, will be hosted online. A discussion paper posted on the consultation site provides details on the key themes being considered:

- Capacity to Innovate Using Digital Technologies;
- Building a World-Class Digital Infrastructure;
- Growing the Information and Communications Technology Industry;
- Digital Media: Creating Canada's Digital Content Advantage; and
- Building Digital Skills for Tomorrow.

A strategy for Canada's digital economy will recognize that success will not come through a particular government program or combination of government programs, but from a concerted effort — combining government vision and the resolve of individual businesses to be global leaders in their fields.

Once the consultation process has closed in July 2010, the government will review the information and use it to inform the development of a national digital economy strategy.

<http://www.digitaleconomy.gc.ca/>

Tiny Achievement

UW Daily Bulletin
May 11, 2010

The University of Waterloo Nanorobotics Group (UW_NRG) has won third place at the annual Mobile Microrobotics Challenge held by the National Institute for Standards and Technology. "Out of eleven registered teams this year," the group boasts, "the Waterloo team was the only Canadian and the only purely undergraduate entry." The competition calls for a robot less than 600 micrometers in all dimensions that can make a two-millimeter dash (a timed sprint across a playing field on a silicon wafer) and meet a microassembly challenge, moving micron-scaled pegs from points on the field into holes, plus a freestyle competition. Waterloo's entry was EMMA (ElectroMagnetic Microrobotic Actuation) and featured a complex image recognition system that controlled the magnetic field acting on the robot with sub-micron accuracy.

PhD Candidates Take Top Honours at Grad Conference

UW Engineering News
May 4th, 2010

Amir Hajimiragha, an electrical and computer engineering doctoral candidate, and Alexander Wong, a systems design engineering doctoral candidate, received awards at Sharing Discovery: The 2010 Graduate Student Research Conference held at the University of Waterloo at the end of April. Hajimiragha won for best poster and Wong won for best oral presentation in the physical science, mathematics and technology theme category.

<http://www.grad.uwaterloo.ca/Conference/presentationwinners.html>

NSERC Grants Received by ECE Faculty Members

UW Engineering News
April 5th, 2010

Waterloo Engineering electrical and computer engineering professors have received grants for four projects from the Natural Sciences and Engineering Research Council of Canada. Guang Gong and Mark Aagaard will develop new mechanisms for privacy protection, authentication and secure communication for low-cost Radio Frequency Identification systems. Raafat Mansour will work with organizations in Canada and France to improve technology in the satellite communication industry through MEMS technology. Sagar Naik will lead a team to develop solutions for problems in gathering data from a variety of sensors used in homes such as safety-critical data. And Weihua Zhuang will investigate strategies to improve the reliability, efficiency, and security of information delivery in wireless communications for vehicles on the road.

Engineering Projects Receive Ontario Research Funding

UW Engineering News
March 2nd, 2010

Engineering researchers have been awarded \$11.4 million from the Ontario Research Fund for three Waterloo-based projects. The project teams are headed by Raafat Mansour and Guang Gong, both of electrical and computer engineering, and Amir Khajepour of mechanical and mechatronics engineering. Mansour's project will use new engineering developments to create the next generation of nano devices; Gong's will develop security solutions for ad hoc communication and embedded systems; and Khajepour's will research the green transportation paradigm. Funding of over \$20 million was announced at Waterloo for six campus-wide projects.

IEEE Launches Biometrics Professional (CBP) Program

Together, IEEE and some of the world's leading biometrics experts have developed a new certification program, IEEE CBP, to meet the training, hiring, and evaluation needs of professionals and companies throughout the biometrics industry.

<http://www.ieeebiometricscertification.org/>

For Fun...

Brain Teaser

Lost in the desert, and walking for days, you are fortunate to come across an oasis just in time to replenish your depleted canteen. You were able to go three days before running out of water, and you average a twenty km/day walking pace. A crude signpost informs you that the nearest city is one hundred kilometers due west. Assuming the oasis has limitless water, and water can be dropped and later retrieved anywhere along the way, how quickly can you get back to civilization?

Engineering Humour

"Knock, knock."

"Heisenburg."

"I'm...I'm not sure..."

"Who's there?"

"Heisenburg who?"