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Backgrounder: Funds to benefit Mechatronics

Contact:
Farid Golnaraghi, [Phone removed]; fmgolnar@sfu.ca

Erik Kjeang, [Phone removed]; ekjeang@sfu.ca

Etienne Naugle, ejn2@sfu.ca

Marianne Meadahl, PAMR, [Phone removed]; marianne_meadahl@sfu.ca

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The Mechatronics Systems Engineering (MSE) program at Simon Fraser University's Surrey campus will benefit from $925,000 worth of new leading-edge scientific equipment, thanks to funds from the federal government's Western Diversification Program.

That news – announced today by Lynne Yelich, Minister of State for Western Economic Diversification – will benefit students, researchers and companies as they work to research, develop and commercialize new technologies and products for a wide range of industrial applications – from the automotive industry and manufacturing to biomedical engineering and aerospace.

The MSE program, one of the first undergraduate degree programs of its kind in North America, is also one of SFU Surrey's most popular programs.

Demand has tripled over the past three years, while the intake of undergrads has risen from 85 accepted in 2007 to 120 this fall.

A minimum of three cooperative education terms gives students solid industry experience. The program also has strong business and communication components.

Mechatronics combines mechanical, electrical and software and computer engineering and is used in the design and development of a wide range of computer controlled electromechanical products and systems.

The design of cars, airplanes, digital cameras and even household appliances requires engineers to have a range of knowledge in everything from gears and bearings to microcircuits.

'There is always going to be a need for traditional engineers but the greatest demand is with the convergence of these disciplines – that's where there is the most innovation and creativity,' says program director Farid Golnaraghi.

That's the appeal to students:

Student Tim Giernes, a Surrey resident, brings his avid interest in aeronautics and aviation to the Mechatronics program. 'Robotics intrigues me and I would love to work in that field,' says Giernes, who is also keen about staying in his own backyard to study. The program is increasingly drawing students from B.C.

Giernes and colleagues are creating an SFU-sponsored soapbox for the Canary Derby, a fundraiser for cancer to be held in Burnaby next week. 'It will look quite different from the other cars,' says Giernes, 'because our main focus is to make it aerodynamic – and as fast as possible.
'

Fourth-year student Etienne Naugle's interest in automation and remotely-operated vehicles shows the breadth of the Mechatronics program. 'My dream job would be to work with underwater or extraterrestrial exploratory robots to study life in the oceans,' says Naugle, who also serves as president of the Mechatronics student society.

Honors student Deepak Krishnamurthy, from India's Birla Institute of Technology & Science, is at SFU Surrey through the MITACs-run Globalinks program. He's working on simulating models of

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fuel cells that are small enough to fit in the palm of your hand.

Working with assistant professor Erik Kjeang, he is now shifting his focus from creating computerized models of microfluidic fuel cell simulations to the fabrication stage, and building new and even better designs.

'These fuel cells are thought to be potential replacements for currently used lithium ion batteries in portable devices such as smart phones, laptops and other wireless devices which require high power and at the same time, need to be small – all while improving reliability and reducing cost,' says Deepak, who will spend the fall semester at SFU then return to studies in India.

Comments
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Milad Karimi
Dear SirI'm a graduate student in the field of electrical engineering at Shahid Beheshti University,Tehran,Iran.

My subject of tehesis is "Water management in PEMFC". I have worked in PEM Fuel Cells for 3 years. I want to continue my education as a Ph.D. student at SFU and with De.

Kjeang.

Is there any fund to support me if i apply for it?