



QUEBEC CITY'S DR. TIGRAN GALSTIAN NAMED WINNER OF THE 2014 ERNEST C. MANNING AWARD OF DISTINCTION

Calgary, AB. (Sept. 23, 2014) – Dr. Tigran Galstian of Quebec City is the winner of this year's \$25,000 Ernest C. Manning Award of Distinction for inventing and commercializing the tunable liquid crystal lens. Dr. Galstian will receive his prize at the Foundation's 33rd Innovation Awards Gala in Ottawa on Wednesday, October 22nd.

The camera function of cell phones has become increasingly important to consumers in deciding which phone to purchase, and so mobile phone manufacturers are continuously looking for methods to improve the phone's camera lens. Current cameras in smart phones use multiple mechanical steps in order to focus – a process that is costly and complicated to get that “tack sharp” image, which isn't easily achieved.

The introduction of the liquid crystal lens, developed by Dr. Galstian and his team, first at Université Laval (Quebec) and then with his industrial collaborators (TLCL, Quebec and LensVector, California), makes the camera focus without mechanical movement. The lens uses an ultra-thin planar component that is composed of two liquid crystal layers secured between glass substrates. The application of an electric field results in an optical lens that can shape, steer and focus light without mechanical movement.

Adapting to the market demands of the mobile phone industry, the manufacturing process of the lens allows for mass production because of its specific wafer-like design. Thousands of high quality lenses are simultaneously produced at an extremely low unit cost, resulting in a lens that is smaller in size, lower in cost and better performing than traditional imaging systems.

The lens is already used in commercially available webcams and is currently being incorporated into smart phones in China, with efforts to soon use the lens in North American smartphones.

But it doesn't end with cell phones. Dr. Galstian and his team are now striving to incorporate the lens into contact lenses and intraocular lenses via cataract surgery. This will significantly improve the quality of life for those who are farsighted. Another exciting collaborative effort is the lens' application in endoscopy, the study of the brain, in which the lens will be used in a probe-like form to monitor stem cell movement and assist in brain surgery. The same concept is currently being used for the development of LED illumination “smart-lighting” systems.

“The economic future of a developed society is intimately linked to scientific and technological innovations,” says Dr. Galstian. “To celebrate innovation is to give it the recognition it deserves while setting an example for young engineers and researchers to pursue similar paths. Such celebration serves to show the general public the scope of the work that is required to nurture an innovation and the pleasure that is derived from it. It also reminds decision-makers of how crucial it is to support an environment that is conducive to innovation.”

“The Ernest C. Manning Awards Foundation is helping to build a culture of Canadian innovation by recognizing and rewarding Canadian innovators” says Foundation President Jennifer Diakiw. “Our Awards celebrate innovators who are improving the lives of Canadians and others around the world through their commercialized innovations. They add value to our provincial and national economies by creating jobs and wealth and positioning our country as a global competitor. Our distinguished alumni are leaders in technology, business, engineering, and social innovation advancement, and we consider them Canada's most valuable resource.”

For more information about the Foundation and the 33rd Ernest C. Manning Innovation Awards Gala visit www.manningawards.ca. Follow Manning Awards on Twitter @ManningAwardsCA, or like on Facebook at www.facebook.com/ManningAwards.

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