The Electrochemical Society and Toyota North America Announce Fellowship Winners for Projects in Green Energy Technology

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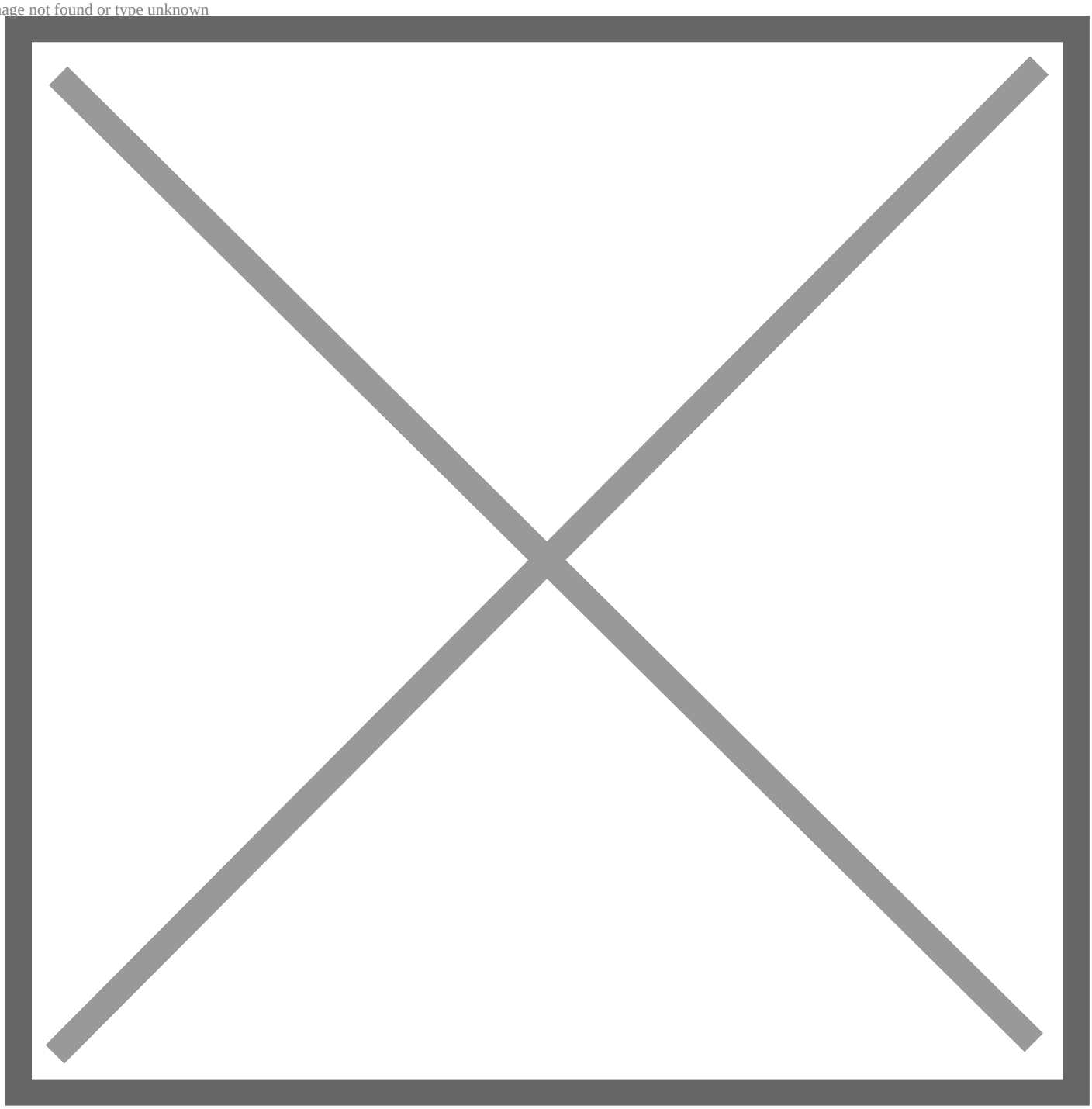

Pennington, N.J. (July 15, 2015) — The ECS Toyota Young Investigator Fellowship Selection Committee has selected three recipients who will receive $50,000 each for the inaugural fellowships for projects in green energy technology. The winners are **Professor Patrick Cappillino**, *University of Massachusetts Dartmouth;* **Professor Yogesh (Yogi) Surendranath**, *Massachusetts Institute of Technology; and* **Professor David Go**, *University of Notre Dame.*

The Electrochemical Society (ECS), in partnership with the Toyota Research Institute of North America (TRINA), a division of Toyota Motor Engineering & Manufacturing North America, Inc. (TEMA), launched the inaugural ECS Toyota Young Investigator Fellowship about six months ago. More than 100 young professors and scholars pursuing innovative electrochemical research in green energy technology responded to ECS's request for proposals.

"The science of electrochemistry can help provide solutions for daunting challenges, like the need to transition to a less carbon intensive economy," says ECS Executive Director Roque Calvo. "ECS was thrilled to partner with Toyota on this program and congratulates our three inaugural fellows."

The ECS Toyota Young Investigator Fellowship aims to encourage young professors and scholars to pursue research in green energy technology that may promote the development of next-generation vehicles capable of utilizing alternative fuels.

Global development of industry and technology in the 20^{th} century, increased production of vehicles and the growing population have resulted in massive consumption of fossil fuels. Today, the automotive industry faces three challenges regarding environmental and energy issues:

(1) Finding a viable alternative energy source as a replacement for oil
(2) Reducing CO_2 emissions
(3) Preventing air pollution

Although the demand for oil alternatives—such as natural gas, electricity and hydrogen—may grow, each alternative energy source has its disadvantages. Currently, oil remains the main source of automotive fuel; however, further research and development of alternative energies may bring change.

Electrochemical research has already informed the development and improvement of innovative batteries, electrocatalysts, photovoltaics and fuel cells. Through this fellowship, ECS and TRINA hope to see further innovative and unconventional technologies borne from electrochemical research.

"We view research as an investment in our future both for our business, but also for the greater society," says Fellowship chair and manager of Toyota's North American Research Strategy Office Paul Fanson. "In order to start to overcome the very difficult technical challenges that we face, it is necessary to invest in and encourage scientists from diverse backgrounds with creative ideas that are willing to think outside of the box. I feel that we were able to accomplish that goal with this inaugural fellowship program, and I am very excited to be a part of it."

The selected fellows will receive restricted grants of $50,000 to conduct the research outlined in their proposals within one year. They will also receive a one-year complimentary ECS membership as well as the opportunity to present and/or publish their research with ECS.

2015 ECS Toyota Young Investigator Fellows

Prof. Patrick Cappillino, *University of Massachusetts Dartmouth*
Battery Division of ECS
Mushroom-derived Natural Products as Flow Battery Electrolytes: to investigate the use of a naturally occurring and biologically produced compound in non-aqueous redox-flow batteries (NRFB) to tune three important attributes while retaining extraordinary metal-binding properties: redox potential; solubility in NRFB solvents; peripheral electrostatic and steric properties.

Prof. Yogesh (Yogi) Surendranath, *Massachusetts Institute of Technology*
Energy Technology Division of ECS
Methanol Electrosynthesis at Carbon-Supported Molecular Active Sites: to synthesize a selective electrocatalyst for methane to methanol conversion by ligating single site transition metal compounds known to activate methane with graphitic carbon surfaces that allow for facile charge transfer.

Dr. David Go, *University of Notre Dame*
Physical and Analytical Electrochemistry Division of ECS
Plasma Electrochemisry: A New Approach to Green Electrochemistry: to demonstrate the feasibility of using plasma electrochemistry to process carbon dioxide (CO_2) for the production of alternative fuels, thereby ushering in a novel electrochemically-driven approach to both capture and reutilize CO_2, reducing the overall carbon footprint of automobiles.

The ECS Toyota Young Investigator Fellowship is an annual program, and the 2016 request for proposals will be released in the fall of 2015.