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R&D Council Recognizes 2018 Edison Patent Award Winners and Special Individual Honorees

Individual Awards to Bell Labs' Dr. Alfred Cho, Rutgers' C-SOPS, and Rowan President Ali Houshmand

Chatham, N.J., November 2, 2018: The Research & Development Council of New Jersey (“Council”) is proud to honor 15 winning organizations with the 2018 Edison Patent Award. These winners, along with 61 inventors, were recognized last night at the 39th Edison Patent Awards Ceremony & Reception at the Liberty Science Center in Jersey City.

BASF, Celularity, Ethicon, part of Johnson & Johnson Medical Device Companies, ExxonMobil, Honeywell, Johnson & Johnson Consumer Inc., Merck, NJIT, Princeton University, Rutgers Biomedical and Health Sciences, Rutgers University-New Brunswick, Siemens Corporate Technology, Siemens Healthineers, Stevens Institute of Technology and SubCom, were recognized for innovative patent work spanning 15 R&D categories, including: agriculture, biomaterials, biotechnology, consumer, enabling technologies, energy, environmental, industrial processes, information technology, medical imaging, pharmaceutical, public health, smart grid, technology transfer, and telecommunications. Below is a full list of category winners and inventors.

For nearly four decades, the Council has placed a call for nominations for its Edison Patent Award. The Council then assembles a committee of top state researchers across STEM (Science, Technology, Engineering and Math) disciplines who review the nominations and judge them based on four criteria: the significance of the problem researched, novelty, utility and the patent’s commercial impact. Those with the highest scores are declared winners and join the ranks of the hundreds of amazing researchers who are Edison Patent Award alumni. Recognizing that New Jersey is home to some of the most cutting-edge patent work dating back to the 1800s, nearly forty years ago the Council developed this award to memorialize its most prolific inventor, Thomas Alva Edison, and to highlight the Garden State’s continuous pipeline of exceptional innovation work.

“New Jersey is home to so much innovation that the inventors and organizations doing this incredible work deserve to be recognized,” said Larry O’Connell, Research & Development Council of New Jersey Chair and IBM’s Vice President Global Technical Leadership. “For nearly 40 years now the Council has made part of its mission to highlight New Jersey’s diverse and substantial innovation economy, and patents are the foundation of it.”

The R&D Council also honored Dr. Alfred Cho, Bell Labs’ researcher, the Center for Structured Organic Particulate Systems at Rutgers University, and Rowan University President Ali Houshmand, for their unique contributions to science and technology, successful public-private partnerships that drive innovation and STEM education.

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Dr. Alfred Cho received the Council's Science & Technology Medal. Dr. Cho spent his career at Bell Labs where his research focused on semiconductor devices. He is recognized as the co-inventor and principal developer of molecular beam epitaxy (MBE), for which he was awarded the National Medal of Science by President Clinton and the National Medal of Technology by President George W. Bush. MBE is a process in which materials are layered atop of one another, atom by atom with in a vacuum, with great precision to form electronic and photonic devices. The MBE technique leads to revolutionary electronic and photonic devices used in microwave and lightwave communications and in the most powerful, high-speed computers. It leads to smaller, faster, cheaper and more reliable devices than those produced by conventional means. Examples are the high electron-mobility transistor (HEMT)-based high-speed low-noise preamplifiers used in smart phones, the modern-day semiconductor lasers based on quantum well structures – almost all laser diodes used today, for fiber optic communications or blue-ray DVD player applications, and the vertical cavity surface-emitting lasers (VCSEL) used in iPhone for Face ID application.

The Center for Structured Organic Particulate Systems, better known as C-SOPS, was awarded the Chairman's Award. A team from C-SOPS, led by Dr. Fernando Muzzio, C-SOPS Director and Rutgers University Distinguished Professor, which includes representatives from NJIT and industry partner Janssen, took the stage at the November 1st ceremony. C-SOPS brings together a cross-disciplinary team of researchers from major universities to work closely with industry leaders and regulatory authorities to improve the way pharmaceuticals, foods and agriculture products are manufactured. Other C-SOPS partners include Purdue University and University of Puerto Rico at Mayaguez.

Rowan University President Ali Houshmand was honored as Educator of the Year. Houshmand oversaw the opening of Cooper Medical School of Rowan University in Camden as well as, the integration of the School of Osteopathic Medicine in Stratford from the former University of Medicine and Dentistry of New Jersey. With both schools being part of Rowan, the University became just the second in the nation to offer both M.D.- and D.O.-granting medical programs. Under Houshmand, Rowan is also partnering with Rutgers-Camden to develop a research hub in the life sciences in the City of Camden and, committed \$50 million to support research there. Another STEM achievement led by President Houshmand is Rowan's strategic partnership with Lockheed Martin to develop a unique, industry-leading workforce credentialing program.

“Our individual award winners have made an incredible impact in innovation and STEM, both in New Jersey and around the world,” said Council President Anthony Cicatiello. “From contributions to high-speed transistors, to developing future doctors and engineers, and to advancement in manufacturing pharmaceuticals, New Jersey should have the utmost pride in the work of these winners and we should continue to champion them and others who continue to grow the innovation economy.”

The 39th Edison Patent Award Ceremony & Reception took place on the evening of November 1, 2018, at the Liberty Science Center. Before 250 guests, our winners were honored with an original film, followed by a celebratory dinner. Tribute films and photos will be available at www.rdnj.org.

As the Research & Development Council of New Jersey, we collaborate among industry, academia and government to grow and strengthen STEM in education, innovation and the economy. The R&D Council is a nonprofit 501(c)(3) organization whose membership includes representatives from academia, government and industry, including several Fortune 500 companies. More information can be found at the R&D Council's website: www.rdnj.org.

Growing STEM. Advancing Innovation. Impacting the World.



2018 Edison Patent Award Winners

Organization	Category	Inventor Names	Patent Name and Number	Location
BASF Corporation	Environmental	M. Shahjahan Kazi, Fabien A. Rioult, Stanley A. Roth, and Kenneth E. Voss	Zoned Catalyst for Diesel Applications U.S. Patent 9,333,490	Iselin, NJ
Celularity, Inc.	Biotechnology	Mohit Bhatia, Chris Lugo, Qian Ye, and James W. Edinger	Human Placental Collagen Compositions, and Methods of Making and Using the Same U.S. Patent 9,974,840	Warren, NJ
Ethicon, part of Johnson & Johnson Medical Device Companies	Biomaterials	Sanyog M. Pendharkar, Anne J. Gorman, Guanghui Zhang, Ada Rivera, Dwayne Lee Looney, and Thomas Lee Craven	Process of Making Flowable Hemostatic Compositions and Devices Containing Such Compositions U.S. Patent 8,551,941	Somerville, NJ
ExxonMobil Research & Engineering Company	Industrial Processes	Srinivasan Rajagopalan, Tabassumul Haque, Mehmet Deniz Ertas, Adnan Ozekcin, HyunWoo Jin, and Bo Zhao	Low Friction Coatings with Improved Abrasion and Wear Properties and Methods of Making U.S. Patent 9,617,654	Annandale, NJ
Honeywell International Inc.	Public Health	Raju Raghurama, Srinivas S N Mutukuri, Abhilasha Srivastava, Reddappa Reddy Kumbarageri, Rajiv Banavali, and Michael Fookan	Water Purification Compositions of Magnesium Oxide and Applications Thereof U.S. Patent 9,422,169	Morris Plains, NJ
Johnson & Johnson Consumer Inc.	Consumer	Michael J. Fevola, Frank C. Sun, Joseph J. LiBrizzi, Joseph B. Gardner, and Russel M. Walters	Compositions Comprising Superhydrophilic Amphiphilic Copolymers and Methods of Use Thereof U.S. Patent 8,258,250	New Brunswick, NJ
Merck & Co., Inc.	Pharmaceutical	Michael Luzung, Guy Humphrey, Bangping Xiang, Kevin M. Belyk, Stephen Mark Dalby, Wilfried Schwab, Burkhard Klenke, Tom Moody, and Gareth Brown	Process for Making Substituted Quinazoline Compounds U.S. Patent 9,890,128	Rahway, NJ



New Jersey Institute of Technology	Energy	Ken K. Chin, Ph.D.	P-Doping of CDTE Polycrystalline Thin Film Based on CD Vacancy Theory U.S. Patent 8,883,549	Newark, NJ
Princeton University	Enabling Technologies	Brian K. Johnson and Robert K. Prud'homme	Process and Apparatuses for Preparing Nanoparticle Compositions with Amphiphilic Copolymers and Their Use U.S. Patent 8,137,699	Princeton, NJ
Rutgers Biomedical and Health Sciences	Technology Transfer	Arjun Raj and Sanjay Tyagi	Imaging Individual mRNA Molecules Using Multiple Singly Labeled Probes U.S. Patent 9,896,720	Piscataway, NJ
Rutgers University-New Brunswick	Agriculture	Nicholi Vorsa, Ph.D.	Cranberry Plant Named 'CNJ97-105-4' U.S. Patent PP19,434	Piscataway, NJ
Siemens Corporate Technology	Smart Grid	Sindhu Suresh	Bidirectional Demand Response Control U.S. Patent 9,680,308	Princeton, NJ
Siemens Healthineers	Medical Imaging	Kai Ma, Terrence Chen, Vivek Kumar Singh, Yao-jen Chang, Michael Wels, and Grzegorz Soza	Method and System for Constructing Personalized Avatars Using a Parameterized Deformable Mesh U.S. Patent 9,524,582	Princeton, NJ
Stevens Institute of Technology	Information Technology	Cameron Wesley Hill, Kevin Michael Barresi, and Mukund Iyengar	System and Framework for Multi-Dimensionally Visualizing and Interacting with Large Data Sets U.S. Patent 9,613,155	Hoboken, NJ
SubCom	Telecommunications	Jonathan M. Liss, Jeffrey A. Deverin, Wilko Eschebach, Ricardo E. Alves, and Renata F. Bodner	System and Method for Providing Event Hysteresis in Network Management Systems U.S. Patent 7,681,068	Eatontown, NJ