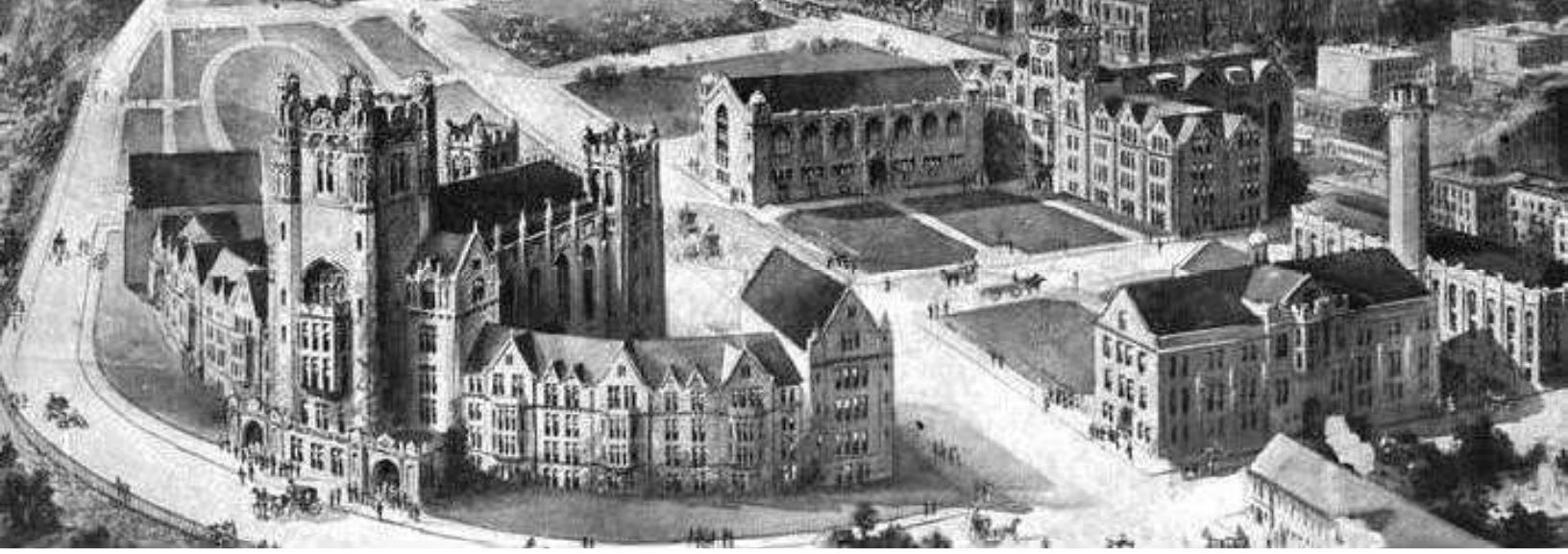


Shepard Hall and Quadrangle - City College of New York (CCNY) 1904

Chemical Engineering Newsletter

The Grove School of Engineering at The City College of New York 09/2019

Prof. Sanjoy Banerjee Honored with EPA Green Chemistry Award

Sanjoy Banerjee, Distinguished Professor of Chemical Engineering at CCNY and Director of the CUNY Energy Institute, is the recipient of the U.S. Environmental Protection Agency's 2019 Green Chemistry Challenge Academic Award for developing "Rechargeable Alkaline Zn-MnO_2 Batteries for Grid Storage Applications." Prof. Banerjee's partners in the work were also recognized from Sandia National Laboratories, Brookhaven National Laboratory, the Energy Storage Program of the Office of Electricity, Department of Energy, and Urban Electric Power, Inc.

From left: Imre Gyuk, Director Energy Storage Program, Office of Electricity, Department of Energy; Gautam Yadav, Research Associate, CUNY Energy Institute; Prof. Sanjoy Banerjee; and Alexandra Dapolito Dunn, ESQ., Assistant Administrator of the Environmental Protection Agency for Toxic Substances.

Prof. Banerjee and his partners were recognized by the EPA in Washington, D.C., for their significant breakthrough in green technology initiated in the Department of Chemical Engineering. They developed large-scale zinc-manganese oxide batteries that can be recharged thousands of times without the typical decrease in the length of the battery's life time. The batteries do not have the safety and environmental limitations of lithium-ion and lead-acid batteries, and use zinc and manganese, materials that are non-toxic and abundant.

The technology has now been commercialized for use in grid stabilization, renewable energy storage, and in households. The batteries are available through Urban Energy Power, Inc., a spinoff of the CUNY Energy Institute with a manufacturing plant in Pearl River, New York.

The Green Chemistry Awards promote the environmental and economic benefits of developing and using novel green chemistry. They recognize chemical technologies that incorporate the principles of green chemistry into chemical design, manufacture, and use.

MESSAGE FROM THE CHAIR

Prof. Ilona Kretzschmar, Chair

Dear Alumni and Friends of the Department,

A new semester has started and we have completed the first month. Some of us are already torturing our students with exams! I am sure you remember who of us that would be. There are a number of new awards the Department of Chemical Engineering faculty have received since the March 2019 Newsletter. For example, Prof. Jeff Morris received the 2019 Stanley Corrsin Award from the American Physical Society. Prof. Marco Castaldi collected another fellow appointment and has become the newest Fellow of the American Society for Mechanical Engineers (ASME) in the department. As you saw on the front page, Prof. Banerjee and his team received one of the Green Chemistry Awards of the Environmental Protection Agency (EPA). Last but not least, Prof. Messinger hit the jackpot by winning the prestigious NSF CAREER award (number three in the department) and also leading his team comprising Profs. Banerjee, Biddinger and Couzis to a success in the 2019 NASA/MIRO challenge. The $3M award will enable CCNY to partner with NASA on future space exploration missions through the development of advanced battery technology. Congratulations to all the faculty!

Prof. Jeff Morris

On the student side, we have graduated our biggest class ever this June and September with a total of 64 students. Many of them have successfully moved on to graduate school and industry. It was an honor to see all of them one last time and help them with this important final step as the Department's interim Academic Advisor. At the same time, I am delighted to announce that Jennifer Harrington will be joining the department as the new Academic Advisor. Her background as Assistant Director of Academic Advising at Baruch College and Assistant Registrar at Stevens Institute of Technology, provide her with the perfect background for the position. Welcome to the team, Jennifer!

1/2 of Graduating Class 2019

Today's society is becoming more and more dependent on international connections and our students need to be exposed to international experiences to become successful engineers. The Fall 2019 Newsletter provides travel journals for a few of our students, who went on international research experiences in Summer 2019. It also tells the story of our alumni coming together and raising funds to support the continuation of the International Research Experience for Students (IRES) program run by the Department of Chemical Engineering at CCNY.

The special alumni highlight (see below) showcases alumnus Ramin Abhari, who has for many years contributed to teaching chemical engineers of all ages about chemical safety through the medium of comics he draws himself. I have read a number of his recent comics illustrating the human component of both laboratory and industrial accidents. He regularly posts them on LinkedIn and I felt compelled to bring them to you, our alumni, and our students. A teaser example is provided later in the Newsletter.

More details and news from our alumni, student/departmental activities, and Grove 100th anniversary events are in the Newsletter. Enjoy and I look forward to hearing from you!

- Ilona Kretzschmar

Ramin Abhari ChE ME '89

Chair's Alumni Highlight: Ramin Abhari is a Principal Process Engineer with Renewable Energy Group (REG). He has over 29 years of experience in the petrochemical and biofuels industries, with expertise in hydrogenation and polymerization technologies. Abhari has held engineering positions with W. R. Grace, General Electric, ExxonMobil, and Syntroleum (now REG Synthetic Fuels). He is named as inventor on over 40 U.S. patents, and has (co)authored several peer-reviewed technical papers about bio-based chemical processes, renewable energy, and fuels. He also writes and illustrates graphic novels/short stories about industrial accidents. Abhari has a Masters in Chemical Engineering from the City College of New York, and Bachelors in Chemistry from the College of Wooster. During his time at CCNY (1987-1989), he took both undergraduate and graduate courses in engineering from Professors Shinnar, Acrivos, Weinstein, and others. His research and Masters thesis were about the drying kinetics of coal, with Professor Isaacs as advisor. Abhari is a registered professional engineer in the State of Oklahoma; a member of AIChE, ACS, and ASTM International; and on the editorial panel of the IChemE publication, Loss Prevention Bulletin.

GROVE 100th ANNIVERSARY: ENERGY INSTITUTE

The Shinnar Memorial Lecture Events - November 18th & November 19th 2019

Dr. Amos Avidan (ChE PhD '80)

Join us in recognizing Prof. Reuel Shinnar's many accomplishments and his efforts in building the Department of Chemical Engineering and the Clean Fuel Institute, which was renamed into the Energy Institute when Prof. Sanjoy Banerjee joined as the Director in 2008. The event is part of the celebrations for the Centennial Anniversary of The Grove School of Engineering at the City College of New York.

The two-day event will start with the 8th Shinnar Memorial Lecture on November 18th given by alumnus Dr. Amos Avidan (ChE PhD '80), followed by a reception with Dr. Avidan and the faculty. On the morning of November 19th, the event will continue with a panel discussion, followed by a tour of the Chemical Engineering Department facilities, and conclude with a lunch with the panelists and faculty members.

The Tuesday panel will focus on the history and development of the Department of Chemical Engineering and on the technology areas that Reuel contributed to, and the continuing contributions being made to them by the Department.

November 18, 2019

- 2:00 PM: Lecture by Alumnus Dr. Amos Avidan (Steinman Hall, Lecture Hall)
  Title: "Chemical Engineering Challenges in Delivering Energy to 11 Billion People in the 21st Century"
- 3:15 PM: Reception to follow the lecture (Shepard Hall, Room SH 305)

November 19, 2019

- 9:30 AM: Light breakfast (Shepard Hall, Room SH 305)
- 10:00 AM: Panel (Shepard Hall, Room SH 305)

  Topic: The Future of Chemical Engineering at CCNY: Reuel's Vision and Contributions

  Panelists: TBD
- 11:00 AM: Tour of the Chemical Engineering and Energy Institute facilities at The Grove School of Engineering at the City College of New York
- 12:00 PM: Closing lunch (Shepard Hall, Room SH 305)

For more information or to RSVP, please contact:
Dr. Valerio De Angelis (vdeangelis@ccny.cuny.edu)

The Reuel Shinnar Endowed Visiting Professorship

Prof. Reuel Shinnar (1923 - 2011)

Prof. Reuel Shinnar was a Distinguished Professor of Chemical Engineering at the City College of New York, where he taught for 40 years. Before that he spent 20 years in industry. Throughout his time at CCNY, he consulted for the oil and chemical industry, DOE, and EPRI. Prof. Shinnar's research covered a wide range of areas ranging from reaction engineering to process design, from criminology to economics. His research changed the design methodology of chemical processes and their controls. He was a member of the National Academy of Engineering and published over 100 papers in many areas of chemical engineeirng. He was also an author and co-author to over thirty patents, several of them in large-scale use. In fact, the current Fisher Tropsch process for diesel production being implemented by Shell, SASOL, and ExxonMobil relies on a patent on which he was a co-author, which drastically reduced cost and improved the yield of the old Fisher Tropsch process.

Reuel Shinnar Endowed Visiting Professorship has been introduced as a way to honor and celebrate Prof. Reuel Shinnar's extraordinary life and career, including over forty years dedicated to the education and learning of chemical engineering students at the City College of New York and advancing the chemical engineering science and practice. The Department of Chemical Engineering has honored Prof. Reuel Shinnar's memory since 2012 by holding the annual Reuel Shinnar Lecture, usually held in the Fall Semester, featuring a speaker whose work has strongly impacted Chemical Engineering practice. The Visiting Professorship will enable a professional to spend time at CCNY to interact with students and faculty through a series of lectures on a topic of their interest with relevance to the field of Chemical Engieering.

THANK YOU to our donors for the Shinnar Professorship: Minas Apelian • Amos Avidan • Jean Beeckman • Bill Borghard • Peter Compo • Tom Degnan • Mike Dolan • Ken Graziani • Doug Harrison • Sol Jacob • Steve Jaffe • Fred Krambeck • Dom Mazzone • George Nemhauser • Stan Sandler • Ajit Sapre • Martin Sherwin • Meir Shinnar • Mildred (Green) Shinnar • Shlomo Shinnar • Ron Sills • Stu Soled • Patty Sparrell • Bob Ware • Bob Wuest • Sergei Yurchak • Anonymous

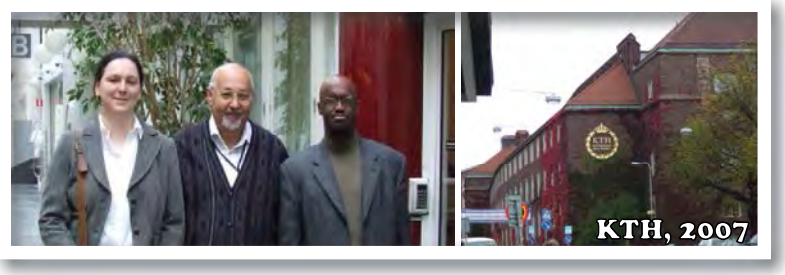
Alumni of the IRES Program Save the Day

2019 Cohorts at KTH in Stockholm and CCNY in New York City.

When the International Research Experience for Students (IRES) program found itself in need of funding in Spring 2019, the alumni of the IRES program came to the rescue and raised $16,895. Their support of the program and additional support provided through the Dean's Office at The Grove School of Engineering allowed Dominik Galazka, Julia Dacanay and Amna Zaheer, three engineering students, to experience research at the Royal Institute of Technology (KTH) and discover the wonders of Stockholm, Sweden and Europe.

A big ***THANK YOU*** to K. Amin, S. Arato, A. Azeezat, T. Burks, B. Chen (ChE BE '18), D. Colon, C. Corredor (ChE BE '09), D. Dilon, J. Edson (ChE BE '12), A. Enemuo, F. J. Guzman (ChE BE '09), M. Harris (ChE BE '15), N. Hernandez (ChE BE '19), L. (Lam) Josephson (ChE BE '11), N. Khemsuwan (ChE BE '10), P. Librizzi (ChE BE '17), Y. Mamtora (ChE BE '19), A. Mayo-Perez, L. Mayo-Perez, S. McCarthy (ChE BE '19), J. Mieses, C. R. C. Oh (ChE BE '16), A. Ruditskiy (ChE BE '12), N. Ramesar (ChE MS '14), M. Cortes Ruiz (ChE BE '17), M. Saad (ChE BE '19), N. Schulman (ChE BE '18), P. Shapturenka (ChE BE '16), F. Smith, J. Toussaint (ChE BE '18), and L. M. Valdiviezo (ChE BE '18). Gratitude is also extended to Dr. P. Compo (ChE PhD '89) and Prof. I. Kretzschmar for matching the funds raised by the IRES alumni.

History of the IRES Program at CCNY



Prof. Ilona Kretzschmar, Prof. Mamun Muhammed, and Dr. Claude Brathwaite during their 2007 visit to KTH.

The IRES program was established in the Fall of 2007 with funds obtained by Prof. Kretzschmar through the CAREER award special opportunity from the National Science Foundation (NSF). The IRES program provides students with a 10-week reserach experience at KTH and built on the CHUST program run by KTH chemical engineering students who have been participting in summer research experiences at CCNY laboratories since 2005. After two successful summers (2008 & 2009, Phase 1), the program received funding from the NSF's Office of International Science and Engineering (OISE) from 2010-2013 (Phase 2) and 2014-2018 (Phase 3). The IRES program is now in the process of finding other external support to keep running. Are you intersted in supporting the progam? Contact: kretzschmar@ccny.cuny.edu

IRES Program in numbers: 10 week research experience at KTH, $10,000 funding per student, 12 years running, 33 IRES Scholars moved on into PhD programs and 11 IRES Scholars moved on into MS programs,
Demographics: 60 IRES scholars (30 female/30 male students), 36 IRES scholars were from underrepresented minority groups,
Output: 7 publications, 12 presentations/talks, and 60 poster presentations.

Alumnus Teaches About Aspects of Safety Using Comics

The comic strip above is inspired by an actual event when a CO line that was leaking water was opened by mistake (CO was made by carbon steam reforming; hence the water). The supervisor assumed water leak must be from the adjacent water line. By Ramin Abhari (ChE ME '89).

ChE Students Study Abroad

This past summer a number of CCNY ChE undergraduates had the opportunity to extend their research experiences to outside the US. Here are student travel journals for three experiences.

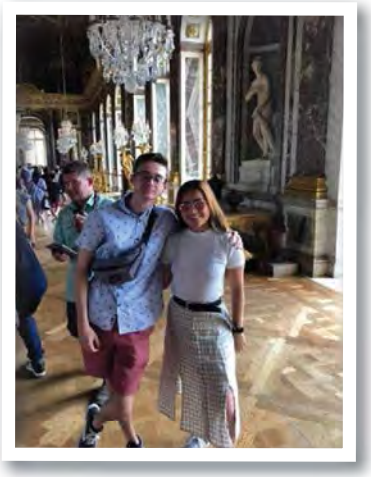
Shivani Vohra (Class of 2022), Japan

This summer, I participated in the GlobalCUNY Research Program, a two-month program (through The Grove School of Engineering), that encourages students to go to one of many international sites to conduct research. I went to Toyohashi University of Technology in Toyohashi, Aichi Prefecture, Japan. The research I conducted was in a computational laboratory, where I was able to use molecular docking and fragment molecular orbital (FMO) calculations to investigate drug targets for Alzheimer's disease.

The experience I had living in Japan for two months was absolutely amazing. Japan is very different from the USA in the way that it embraces tradition and hard work. It was great to be able to travel around Japan to major cities (such as Tokyo, Kyoto, and Osaka) and also be able to enjoy the countryside in Toyohashi. Being able to experience Japanese culture and to meet students from all over the world (being at an international university) and from Japan, made this trip an unforgettable experience. I made many connections with the people I met at the university, and I know that being able to make connections with people (regardless of knowledge of the language spoken) is definitely a great skill to have for the future.

Shivani sightseeing in Japan

Dominik Galazka (Class of 2020) and Julia Dacanay (Class of 2020), Sweden



Dominik and Julia sightseeing in Sweden

Over the summer, we had the opportunity to do research at the Royal Institute of Technology (KTH) in Stockholm, Sweden, as part of the the IRES program (see story on page 4). We worked with the Applied Electrochemistry and Chemistry Departments, where we were able to learn research concepts and have a hands-on experience in European laboratories. During the 10-week program, Dominik worked on experiments using tungsten carbide to model uranium carbide in catalytic decomposition reactions. Meanwhile, Julia worked with sodium-ion batteries to find a suitable cathode material that would satisfy the need for high energy density and have electrolyte stability. Throughout our research experience, we were able to network and collaborate with masters and PhD students.

Aside from doing research, we were able to learn and embrace Swedish culture. We were surprised that during the summer, the sun set very late and rose very early in the morning. It definitely made it hard to sleep for the first few days especially being jet lagged. We were also able to participate in fika (coffee break) throughout our stay. During fika, we were able to socialize and take a break from a long day of working. Sweden has a big culture on valuing breaks, therefore, during the summer it was amusing to see that almost everyone in the department was on their summer break, which left the laboratories with little-to-no-one in there.

Maha Alyas (Class of 2020), China

You hear students talking about their study abroad experience 24/7 after they come home, about how transformative of an experience it is and of how they've grown so much. I never fully understood the wonder I saw in their eyes or the excitement that showed through their voices until I came home from researching abroad in Beijing, China. Experiencing the culture, academic lifestyle, and research ethics in a foreign country really IS transformative in so many ways. Through the GlobalCUNY program at CCNY, I was able to research nano-drug delivery systems for cancer treatment at the Beijing University of Chemical Technology (BUCT) this past summer.

Conducting research for countless hours throughout the week was followed by the most amazing experiences on the weekends. My memories of the summer are filled with crazy KTV sessions, hours spent exploring Beijing's hutong's, fireworks at Disneyland Shanghai, breathtaking architecture and beautiful gardens that you could get lost in. Now that I'm back in the States, I've noticed myself talking about my experiences 24/7, casually sliding it into conversations with nostalgia coating my words—something, which in all honesty, I probably won't be able to stop doing for some time.

Maha sightseeing in China

Update on Acrivos Scholars

Checking in with Andreas Acrivos Graduate Fellowship Alumni

John Paul Bir Singh
(ChE PhD '07)

Rajesh Goyal
(ChE PhD '08)

Rohit Ingale
(ChE PhD '08)

Pandurang Kulkarni
(ChE Phd '09)

Xiaoxiao Chen
(ChE PhD '14)

Stephanie Marenne
(ChE PhD '17)

The Andreas Acrivos Graduate Fellowship commemorates the intellectual curiosity and academic leadership of Einstein Professor Emeritus Andreas (Andy) Acrivos, who served on the faculty of Chemical Engineering at the City College of New York and directed the Levich Institute from 1988-2000. Each year, the Chemical Engineering Graduate Studies Committee awards a first year PhD student with the Acrivos Fellowship. Here, we are highlighting some of the Acrivos Scholar Alumni.

John Paul Bir Singh, 2002 Acrivos Scholar PhD Advisor: Prof. Morton Denn. Location: Houston, TX. Employer: Halliburton Energy Services. Job Description: I develop new products - from conception to commercialization. We have developed chemical products, formulations, software for engineering calculations and new processes. Every new idea and associated product development has an associated unique challenge. Ultimately, it is a humbling experience each time!
Fun Fact: I grew up in Delhi, my wife in Mumbai. Despite the odds, we met in the amazing city of New York while I was a graduate student at CCNY. Now we have a four year old who keeps us more occupied than we were during our graduate school days:D. And, oh yes, we all love to dance!

Rajesh Goyal, 2003 Acrivos Scholar PhD Advisor: Prof. Morton Denn. Location: Vadodara, India. Employer: Solvay. Job Description: I have recently started providing intellectual property support to my company, which includes managing technical information on patents/market and helping Solvay develop IP strategy.
Fun Fact: I haven't driven a car in India though I have been living here for a long time and used to drive for 8 years in the USA.

Rohit Ingale, 2004 Acrivos Scholar PhD Advisor: Prof. Mark Shattuck. Location: Los Angeles area, CA. Employer: Kite, A Gilead Company. Job Despcription: I am currently working as a Principal Engineer. My work enables development and manufacture of novel T-cell based cancer immunotherapies for patients. We are focused on curing cancer.
Fun Fact: I enjoy travelling and spending time with my family (wife and 2yr old daughter). I am a news junkie as well :).

Pandurang Kulkarni, 2005 Acrivos Scholar PhD Advisor: Prof. Jeff Morris. Location: Austin, TX. Employer: Equinor (formerly Statoil). Job Description: I am conducting applied research and developing novel technologies to improve productivity and sustainability of shale oil and gas resources in the world. Specifically, I am working on hydraulic fracturing and fluid flow in nano-Darcy porous media.
Fun Fact: I am a cricket enthusiast and love to watch and play the sport. During my graduate studies at CCNY, we used to play cricket late at night in the hallway of the chemical engineering floor.

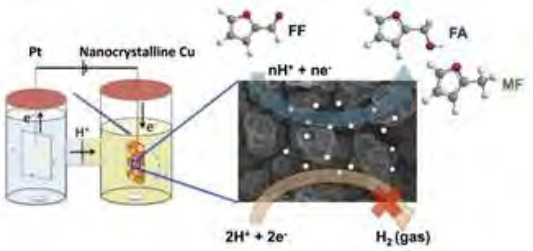
Xiaoxiao Chen, 2009 Acrivos Fellow PhD Advisor: Prof. Charles Maldarelli. Location: New Jersey. Employer: Promotion In Motion, Inc. Job Description: I am working as a Sr. Scientist. We apply expertise in dietary supplements, confectionery and healthy snacks to lead product life cycle development from benchtop-to-commercialization in alignment with food safety laws & standards.
Fun Fact: Being a Mom for two young and energetic boys, and I still can perform a good job at my work! LOL.

Stephanie Marenne, 2013 Acrivos Scholar PhD Advisor: Prof. Jeff Morris. Location: Long Beach, CA. Employer: Divergent3d. Job Description: I work in a manufacturing company that focuses on automotive construction, as a software engineer for the additive manufacturing department. I write software for topology optimization and for the simulation of the 3D printing of metals.
Fun Fact: Living in New York made me a musical nerd. Luckily, most touring shows make it to LA!

ChE Research Highlights

Enhanced Activity for Electrochemical Hydrogenation and Hydrogenolysis of Furfural to Biofuel Using Electrodeposited Cu Catalysts

Sungyup Jung (PhD '18), Alexandros Karaiskakis (PhD '18) and Prof. Elizabeth Biddinger recently published a paper in *Catalysis Today* illustrating the importance of catalyst morphology in electrochemical reduction of furfural to 2-methyl furan and furfuryl alcohol. In the paper, copper electrodeposited on copper foil was used as the electrocatalyst to increase reaction rates and to investigate the impact of the catalyst structure on the reaction products compared to commonly-used smooth copper foil. The electrocatalyst composed of 400 nm copper particles not only improved the reaction rate for the electroreduction of furfural to 2-methyl furan compared to the copper foil and a 4 µm copper particle catalyst, but also prevented the fouling of the electrocatalyst. The works moves the field one step closer to being able to electrochemically upgrade biomass-derived species at biorefineries.



Overall scheme for electrochemical reduction of fufural to furfuryl alcohol and 2-methyl furan while avoiding side reactions on nanocrystalline copper electrocatalysts. Used with permission from Elsevier.

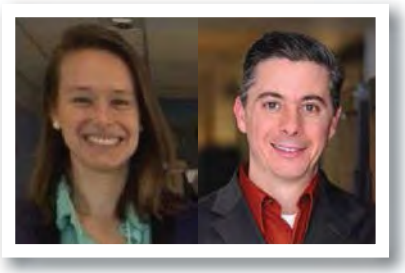
Alexandros Karaiskakis, Sungyup Jung and Prof. Biddinger at ECS

Journal Reference: Sungyup Jung, Alexandros N. Karaiskakis, Elizabeth J. Biddinger in *Catalysis Today* 323, 26-34 (2019).

Catalytic Partial Oxidation Reformation of Diesel, Gasoline, and Natural Gas for use in Low Temperature Combustion Engines

Onboard catalytic reactor during operation.

The first half of 2019 has been quite successful for the students in the Combustion and Catalysis Laboratory (CCL) directed by Prof. Marco Castaldi. They have published seven research manuscripts reflecting their various domestic and international collaborations. One notable publication is from Robyn Smith who is preparing for her PhD Thesis defense this Fall. Her work is published in *Fuel* and demonstrates the use of an onboard catalytic reforming reactor to convert a portion of commercial transportation fuels enabling better performance and efficiency for reactivity controlled compression ignition (RCCI) engines. The new engine configuration has relevance to both conventional and advanced combustion concepts.

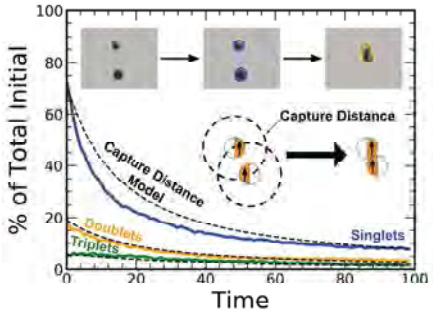


Robyn Smith and Prof. Castaldi

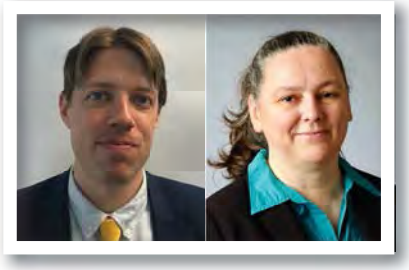
Journal Reference: Hariharan, Deivanayagam, Ruinan Yang, Yingcong Zhou, Brian Gainey, Sotirios Mamalis, Robyn E. Smith, Michael A. Lugo-Pimentel, Marco Castaldi, Gill Rajinder, Andrew Davis, Dean Modroukas, and Benjamin Lawler in *Fuel* 246, 295-307 (2019).

Measuring, Modeling, and Predicting the Magnetic Assembly Rate of 2D-Staggered Janus Particle Chains

Thomas Long (PhD Class of 2020) and Prof. Ilona Kretzschmar in collaboration with Prof. Córdova-Figueroa at the University of Puerto Rico, Mayaguez recently published a paper in *Langmuir* that discusses the synthesis, aggregation, and tracking of asymmetric particles known as Janus particle (JPs). Spherical polystyrene particles (d = 2.4 µm) with one half of their surface coated with magnetic iron oxide ($Fe_{1-x}O$) are used. When a uniform magnetic field is applied to a solution of magnetic JPs, they align with the magnetic field and irreversibly aggregate into chains that place their dipoles head-to-tail and as close as possible. Analysis of the aggregation process with object detection software developed by Thomas for the project allows calculation of diffusion coefficients and magnetic dipole strength of the JPs. The particle positions are converted into concentration profiles of each aggregate type (singlets, doublets, triplets, etc.). Concentration profiles are fitted to the Smoluchowski coagulation equation with the least-squares method. The rate constants associated with the best fit of the data enabled the development of a "capture radius" model that provides aggregation predictions for related magnetic particle systems.



Kinetics of Janus singlets, doublets and triplets modeled by capture radius model.



Thomas Long and Prof. Kretzschmar

Journal Reference: Thomas W. Long, Ubaldo M. Córdova-Figueroa, and Ilona Kretzschmar in *Langmuir* 35, 8121-8130 (2019).

Connect, Engage, & Contribute

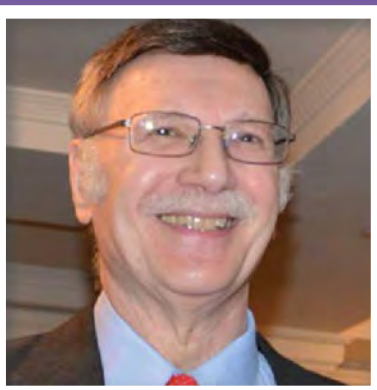
Connect

There are many ways to connect with your Alma Mater. Please check the boxes that interest you.

- ☐ I would like to visit the campus.
- ☐ I would like to speak about my experience to students.
- ☐ I would like to attend departmental seminars on technical and research topics (Monday 2-3 PM).
- ☐ I would like to connect via LinkedIn group "CCNY ChemEng Alumni."
- ☐ I would like to mentor students.

You can always email us with updates or questions at: **chealumni@ccny.cuny.edu.**

Engage



David J. Deutsch , ChE BE '68

David has been an active supporter of chemical engineering undergraduate students from CCNY and other schools in the Metro New York area through his leadership in the Metro New York Section of AIChE. He has assisted students to professionally develop, network, and ultimately find internships and full time jobs as part of the Metro New York section. David has used both his BE in ChE from CCNY and his MBA from Fordham University throughout his career. He has worked in designing plants for the petrochemical, water and waste water industries and at a tri-state environmental regulatory commission; served as an Editor and New Products Manager for *Chemical Engineering* Magazine and Product Manager for a hazardous chemical database for another publisher; offered advice as a Chemical Industry Analyst for a money-center bank; and, lastly worked as a financial and marketing consultant. David is the founder of Vista Marketing and Financial. David has used his vast experiences to help CCNY undergraduates identify all the different areas they can apply their skillsets to. If you are interested in getting in touch, David can be reached via LinkedIn (www.linkedin.com/in/david-deutsch-2390113/) or info@aiche-metrony.org.

Contribute

Please fill out this form to provide an information update and/or make a donation to the Department Chemical Engineering at CCNY.

Name_____

Graduation Year & Degree from CCNY (if applicable)_____

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$_____ towards Fund for Excellence

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To leave a gift in your will, simply share this sentence with your attorney or financial planner:

"I bequeath $_____or_____% of my estate to the Department of Chemical Engineering, CCNY, Steinman Hall, T322, 140th Street & Convent Avenue, New York, NY 10031."

☐ I have included the Department of Chemical Engineering (CCNY) in my will.

Checks may be made out to: Department of Chemical Engineering (CCNY)

Gifts to the Department of Chemical Engineering (CCNY) are tax-deductible as permitted by law.

Please return information/pledge card and checks to: Department of Chemical Engineering Office, City College of New York, Steinman Hall Room 322, 140th Street & Convent Avenue, New York, NY 10031

Information only updates may be sent to: chealumni@ccny.cuny.edu