

## DIVISION OF POLYMER PHYSICS

*Fall 2021 Newsletter*

### Chair's Welcome

The planning for the 2022 March Meeting (March 14–18, Chicago, IL) is underway and Brad Olsen, the Program Chair, along with many volunteer colleagues in DPOLY have assembled a fantastic program for the meeting. The deadline for abstract submissions is October 22, 2021 and can be done at <https://march.aps.org/abstracts/>

DPOLY continues to be an incredibly vibrant and diverse community thanks to the broad and diverse membership and a spirit of inclusion. Be sure to renew your membership in DPOLY and encourage your friends, colleagues and students to join or renew their membership in DPOLY. A strong membership base for DPOLY is the cornerstone for the outstanding programming, award and fellowship programs, and the positive efforts to improve diversity and inclusion.

Sincerely,  
Ramanan Krishnamoorti

### APS Engage

Login to <https://engage.aps.org> to set your profile communication settings and participate in DPOLY discussions. For example, you can receive daily or weekly digests. Please use this resource to post items of interest to DPOLY.

This is also the site for the division homepage: <https://engage.aps.org/dpoly/home>

### 2022 DPOLY March Meeting Program

#### Call for abstracts and nominations

Please note: APS March Meeting will be hybrid, meaning part in-person/part virtual. From March 14 to 18, join more than 12,000 physicists in Chicago, Illinois for APS March Meeting 2022. **Submit your abstracts by October 22, 2021.**

<https://march.aps.org/abstracts/>



### APS DPOLY Abstract Workshop

The deadline for abstract submission for the APS March Meeting is quickly approaching. Do you have questions regarding abstract guidelines or abstract sorting categories? Then come to the APS DPOLY Abstract Workshop on Friday October 15th at 12pm PT! Members of the DPOLY

Executive Committee will cover tips for effective abstract writing and walkthrough the available focus sessions and abstract sorting categories for the 2022 March Meeting. We hope that this workshop will provide useful information for both new and longtime DPOLY members. The workshop is open to current DPOLY members only, but a recording will be available to our members just in time to meet the October 22nd abstract submission deadline!

Register at <https://apsphysics.zoom.us/meeting/register/tJ0ucuyprT0iEteiYPg-ArLgaVzihGrkcbQz>

We are thankful for our Early-Career members Whitney Loo (U. Chicago) and Thomas O'Conner (Carnegie Mellon University) for organizing this great workshop.

## **2022 Padden Award Nominations**

DPOLY is soliciting nominations of PhD students for the Frank J. Padden Jr. Award for Excellence in Polymer Physics Research, an annual highlight of the APS March DPOLY program since 1995. For details please visit the [Padden award webpage](#) and send nominations by email to Ryan Hayward ([ryan.hayward@colorado.edu](mailto:ryan.hayward@colorado.edu)) using the subject line "Padden\_name of student". Complete nomination packages will include: (1) a 2-page CV of the nominee, (2) a nominating letter addressing the quality of graduate research and academic excellence of the nominee, and (3) an acceptable abstract for a contributed talk in the DPOLY March Meeting Program. The deadline for receipt of all materials is the general October 22, 2021 deadline for March Meeting abstract submission. Please note that DPOLY reimburses meeting registration for all finalists from overseas.

Please nominate PhD students whom you have supervised, or with whom you have worked closely, in the field of polymer physics. DPOLY especially encourages nomination of students from groups who have been traditionally underrepresented in physics. For further details visit: <https://engage.aps.org/dpoly/honors/prizes-awards/frank-padden-award>

We are grateful to the University of Akron for sponsoring the finalists' dinner and look forward to the 2022 Padden Award Session!

## **2022 DPOLY Short Course: Sustainable Polymers**

The topic on “*Sustainable Polymers: Physics of New Materials, Design for Sustainability, and End-of-Life*” is presently being planned by LaShanda Korley (Univ. of Delaware), Megan Robertson (Univ. of Houston), and Nicholas Rorrer (NREL)

This short course will address various topics relevant to polymer sustainability, including fundamental property relationships and processing of sustainable polymers, sustainable syntheses and renewable origins of polymers, covalent adaptable networks, polymer recycling and upcycling, advanced characterization for and data science applications in polymer sustainability, and life cycle and techno-economic analyses.

Target Audience: Graduate students, postdoctoral researchers, scientists from industry and national laboratories, professors



## 2022 DPOLY Polymer Physics Prize

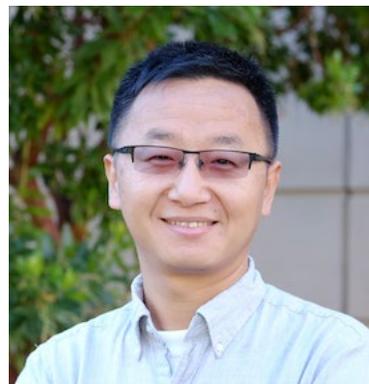
DPOLY is pleased to announce Prof. **Sanat Kumar** (Columbia University) as the winner of the 2022 Polymer Physics Prize for “*for fundamental experimental, simulation, and theoretical contributions to understanding structure, assembly, and dynamics in polymer nanocomposites and thin films.*”

Professor Kumar is Bykhovsky Professor of Chemical Engineering at Columbia University, New York, NY. He has a joint appointment at Brookhaven National Laboratory, Upton, NY. He earned his Chemical Engineering BTech degree from the Indian Institute of Technology, Madras ('81) followed by SM ('84) and ScD ('87) degrees from the Massachusetts Institute of Technology, Cambridge, MA. Subsequently, he spent one year as a post-doctoral fellow at the IBM Almaden Research Center in San Jose, CA ('87-'88). His current research focuses on hybrid inorganic-organic composite materials, ranging from enunciating their fundamentals to their application in a variety of critical sustainability contexts (gas/water separations). More recent interests are in polymer upcycling. In all cases a combination of theory, experiment and simulations are employed in the solution of these problems. He has authored 300 publications, 3 patents and an edited book, is a fellow of the American Physical Society and is the Chevron visiting professor at the Indian Institute of Technology, Madras. He is an Associate Editor of *Soft Matter* and has held multiple leadership roles, including service as the APS DPOLY Chair and 2022 Polymer Physics Gordon Research Conference Chair.

## 2022 John H. Dillon Medal

DPOLY also congratulates Professor **Jian Qin** (Stanford University) on receiving the 2022 John H. Dillon Medal for “*the advancement of analytical and computational tools in the thermodynamics and morphology of ionic or ion-containing polymeric materials.*” Sponsored by Elsevier, the publishers of the journal *Polymer*, the Dillon Medal recognizes outstanding research accomplishments by early-career polymer physicists who have demonstrated exceptional research promise.

Professor Qin is an Assistant Professor in the Department of Chemical Engineering at Stanford University. He received B.S. and M.S. degrees in Materials Science from Tsinghua University, and his Ph.D. from University of Minnesota under the supervision of Profs. David C. Morse and Frank S. Bates. Following postdoctoral fellowships at Pennsylvania State University, with Prof. Scott T. Milner, and the University of Chicago, with Prof. Juan J. de Pablo, he joined Stanford University as a Terman Faculty Fellow in 2016. His research focuses on theoretical study of morphological and rheological behavior of polymeric fluids, electrostatic interactions in structured electrolytes, and surface charge polarization. He has held the Kadanoff-Rice Fellowship and has been recognized by a 3M Non-Tenured Faculty Award, the Hellman Faculty Award, the NSF CAREER Award, the ACS PMSE Arthur Doolittle Award, the ACS PMSE Young Investigator Award, and the Stanford University Tau Beta Pi Engineering Honor Society Chapter's Teaching Honor Roll.



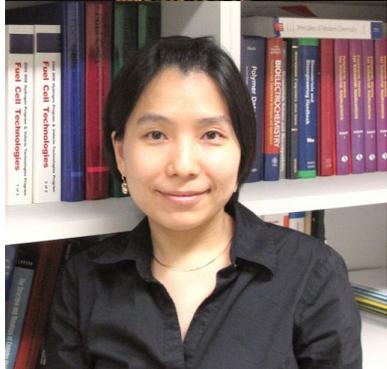
## 2021 APS Fellows

DPOLY also congratulates three new APS fellows:



Enrique D. Gomez  
Pennsylvania State University

*“For innovative use of electron microscopy and tomography to elucidate transport in polymers for clean energy and water.”*



Moon Jeong Park  
Pohang University of Science and Technology

*“For creative and insightful experiments to elucidate the roles of molecular architecture and self-assembled nanostructure on the electrical, ion transport, and mechanical properties of charged polymers.”*



Vivek M. Prabhu  
National Institute of Standards and Technology

*“For fundamental insight into the chain conformation, structure, phase separation, and interfaces of polyelectrolytes enabled by light and neutron scattering methods.”*

## Underrepresented Minority (URM) Travel Grant

DPOLY is inaugurating a new travel grant for underrepresented minority student participation at the March meeting of the APS. DPOLY plans on awarding at least two travel awards of up to \$1500 each year for URM students who have submitted abstracts for the March Meeting. Nomination guidance and selection process will be shared with the DPOLY community through the DPOLY website on <https://engage.aps.org/dpoly/home>.

## Polymer Physics Gordon Research Conference: 2022

The next *GRC on Polymer Physics* will be held July 24-29, 2022 at Mt Holyoke College, the pandemic willing. Sessions on upcycling (speakers: Broadbelt, Beckham), Battery materials

(Schönhoff, Schafer, Glynos, Park), Limits of Self-Assembly (Mahanthappa, Gang), AI/ML (Hexemer, Audus, Bereau, Ganesan), Biomaterials (Heilshorn, Korley), Nanocomposites (Rubinstein, Kim, Katsumata, Couty), Dynamic Networks (van Ryumbeke, Qin), Membranes (Freeman, Lee, Modestino, Asatekin) and Novel Characterization Methods (Gomez, Collins, Wong) are planned. The power hour will be chaired by Jayaraman, Pozzo and Priestley. Please plan on attending to show the strength and breadth of the polymer physics community. Please circulate to people in adjacent communities that may be interested. Please direct any questions to Rachel Segalman and Sanat Kumar.

<https://www.grc.org/polymer-physics-conference/2022/>

## 2021 Virtual Polymer Physics Symposium

DPOLY was thrilled to sponsor the second Virtual Polymer Physics Symposium 2021 on Aug 11 – 12, 2021. We thank our enthusiastic postdoctoral members of DPOLY Amal Narayanan, (Princeton University), Jelena Dinic (University of Chicago and Argonne National Laboratory), and Karthika Suresh, (University of Illinois, Chicago, and Motif FoodWorks) for organizing a terrific symposium. More than 200 registered attendees participated in a mentorship panel, 4 technical sessions, diversity discussion hour, and networking sessions. The technical and networking sessions became a platform for discussing science and forming new friendships and collaborations. You can find more details about the program here: <https://lu.ma/vpps21>

The graduate and postdoctoral-led Polymer Physics Slack Channel provides additional networking opportunities for VPPS participants: <https://sites.google.com/view/polymerphysics>  
Feel free to join!

## A message from APS: Enhancing Industrial Physics Engagement

*By Dr. Daniel Pisano*

It has been a year since I was introduced as the APS Director of Industrial Engagement. A lot has happened in the Industrial Engagement area since then. The Industrial Mentoring Program (IMPact: <https://impact.aps.org/>) has been upgraded so it is easier to use and accepts both APS mentors and mentees worldwide. We further opened the site to all undergraduate students as well as graduate students and early-career physicists.



We reviewed the results of the APS Membership Acquisition and Retention Study and have taken steps to address your requests, i.e. more information of career advice, finding jobs, and professional advancement. This past October we began a webinar series, Success in Industry, the focus of which is to give students and physicists insight into the soft skills and tools they need to be successful in a private sector job (Note: many of these same skills will help you in academia as well.)



The series has been well-received as measured by both its objective score in surveys and by testimonials:

*“Since I am a graduate student close to finishing [my] PhD program, I learned a lot of things from this webinar. It really helps to prepare [me] further”*

*“Excellent presentation with great material. I have been a physicist and manager in industry for 40+ years and found the material and advice spot on.”*

The five broadcasts that occurred can be viewed at <https://aps.org/webinars/index.cfm>

I urge you to sign up for the five upcoming sessions at the above web link.

APS has also begun a pilot of the APS Accelerator for Success in Industry. This initiative includes the webinars mentioned above as well as additional webinars, workshops, and videos geared towards careers in Industrial Physics. Initially they will be focused on students and early-career physicists, but we hope to expand the program to provide both career advice and professional development for mid-career physicists in industry. To continue to keep these offerings as no-cost or very low-cost for participants, we are enlisting the help of the corporations who benefit from having better trained employees and perspective employees.

The last initiative I would like to cover is one of messaging. Many APS members have mentioned that they are unaware of the benefits that APS offers and, in particular, the benefits of being a member while employed as an Industrial Physicist. In the future look for more frequent outreach to our industrial physicist members, keeping you informed what APS is doing on your behalf. You will see stories in APS News, on the APS.org website, and especially on the Engage websites. We welcome feedback and ideas at [pisano@aps.org](mailto:pisano@aps.org)

There is plenty more to come that will benefit our Industrial Physicists. Stay tuned!

Best regards,

**The DPOLY Executive Committee**