

ACS Polymers Au Recognizes Rising Stars in Polymers in 2021

Cite This: *ACS Polym. Au* 2022, 2, 3–7

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The future of a scientific field is bright if the research emanating from the laboratories of the field's rising stars is innovative, exciting, and truly impactful. We are fortunate to be part of the polymer science and engineering research community, where there is tremendous talent among early career polymer researchers around the world. As editors of *ACS Polymers Au*, we invited 13 outstanding early career polymer scientists who have been leading cutting-edge, novel, and impactful research in their independent laboratories to submit peer-reviewed manuscripts for this virtual special issue, highlighting the 2021 Rising Stars in Polymers (Figure 1). These

Adrianne M. Rosales is an Assistant Professor of Chemical Engineering at the University of Texas at Austin. She received her B.S. in Chemical Engineering from the University of Texas at Austin in 2007 and subsequently her Ph.D. in Chemical Engineering from the University of California, Berkeley in 2013 under the guidance of Rachel Segalman. Upon completion of her Ph.D., she was a postdoctoral fellow with Kristi Anseth at the University of Colorado at Boulder and a visiting scholar with Jason Burdick's group at the University of Pennsylvania until 2017. Her current research group at the University of Texas focuses on the design of hierarchically ordered materials with dynamic behavior for synthetic extracellular matrices and therapeutic applications. More information about Dr. Rosales and her research can be found [here](#).

Her article for this special issue is titled 'Effect of pH on the Properties of Hydrogels Cross-linked via Dynamic Thia-Michael Addition Bonds'. Article DOI: [10.1021/acspolymersau.1c00049](https://doi.org/10.1021/acspolymersau.1c00049).



Figure 1. 2021 Rising Stars in Polymers virtual special issue.

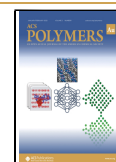
scientists lead research in various subfields within polymer science and engineering, including polymer chemistry, physics, processing, computations, engineering, etc. We encourage you to learn about them and their research through their brief biographies below (presented in alphabetical order), research group Web sites, and their *ACS Polymers Au* publications that are part of this virtual special issue.



Anindita Das received her M.Sc. degree in Chemistry from the University of Calcutta in 2009 and Ph.D. degree from the Indian Association for the Cultivation of Science (IACS), India, in 2014 under the guidance of Suhrit Ghosh. Subsequently, she worked as an Alexander von Humboldt Postdoctoral Fellow with Patrick Theato at the University of Hamburg, Germany from 2014 to 2016. In 2016, she joined the group of E. W. Meijer at the Eindhoven University of Technology, The Netherlands,



Published: February 9, 2022



for a second postdoctoral stint. In 2017, she returned to IACS as a Faculty Fellow, where she currently holds the position of Assistant Professor in the School of Applied and Interdisciplinary Sciences. Her research interests include supramolecular assemblies of functional π -systems and macromolecules employing halogen bonding and other underexplored supramolecular interactions, crystallization driven macromolecular assemblies and biodegradable polymers. More information about Dr. Das and her research can be found [here](#).

Her article for this special issue is titled “Programmed Macromolecular Assembly by Dipole–Dipole Interactions with Aggregation-Induced Enhanced Emission in Aqueous Medium”. Article DOI: [10.1021/acspolymersau.1c00054](https://doi.org/10.1021/acspolymersau.1c00054).



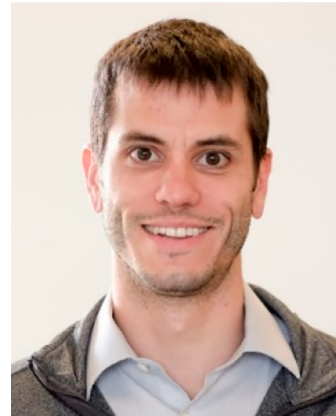
Athina Anastasaki obtained her B.S. in Chemistry at the University of Athens in 2011. She then commenced her Ph.D. studies at the University of Warwick (Chemistry Department) under the supervision of Dave Haddleton and graduated in late 2014 with the Jon Weaver Award for the best Ph.D. in Polymer Chemistry in the UK. In early 2015, she took a Monash-Warwick research fellow position between Monash University and the University of Warwick, jointly supervised by Thomas Davis and Dave Haddleton. In 2016, she received an Elings Fellowship, followed by a Global Marie Curie Fellowship, to conduct research with Craig Hawker at the University of California, Santa Barbara. She joined the Materials department of ETH Zürich in January 2019 as an Assistant Professor. Her group at ETH Zürich is focusing on developing new controlled radical polymerization strategies for the synthesis of advanced materials. More information about Dr. **Anastasaki** and her research can be found [here](#).

Her article for this special issue is titled “Tuning Ligand Concentration in Cu(0)-RDRP: A Simple Approach to Control Polymer Dispersity”. Article DOI: [10.1021/acspolymersau.1c00030](https://doi.org/10.1021/acspolymersau.1c00030).



Blair K. Brettmann is an Assistant Professor in Chemical and Biomolecular Engineering and Materials Science and Engineering at Georgia Tech. She received her B.S. in Chemical Engineering from the University of Texas at Austin in 2007 and her Ph.D. in Chemical Engineering from MIT in 2012 with Bernhardt Trout. Following her Ph.D., Dr. Brettmann was a Senior Research Engineer at Saint-Gobain (2012–2014) and a postdoctoral researcher at the Institute for Molecular Engineering at the University of Chicago with Matt Tirrell (2014–2016). Her research focuses on linking molecular to micron-scale phenomena to polymer processing to enable rapid and science-driven formulation and product development. More information about Dr. **Brettmann** and her research can be found [here](#).

Her article for this special issue is titled “Solvent effects on the elasticity of electrospinnable polymer solutions”. Article DOI: [10.1021/acspolymersau.1c00041](https://doi.org/10.1021/acspolymersau.1c00041).



Christopher M. Bates earned a B.S. degree in Chemistry at the University of Wisconsin–Madison in 2007 and received a Ph.D. in Chemistry from The University of Texas at Austin in 2013 under the guidance of C. Grant Willson. After a postdoc with the late Robert H. Grubbs at the California Institute of Technology, Christopher moved to the University of California, Santa Barbara, in 2016 as an Assistant Professor in the Materials Department. His research group at UC Santa Barbara works at the intersection of chemistry and materials science, leveraging synthetic and physical experimental techniques with the goal to understand block polymer self-assembly and design and engineer new elastomeric materials and thin film patterning. More information about Dr. **Bates** and his research can be found [here](#).

His article for this special issue is titled “Carbon Nanotube Composites with Bottlebrush Elastomers for Compliant Electrodes”. Article DOI: [10.1021/acspolymersau.1c00034](https://doi.org/10.1021/acspolymersau.1c00034).

Eilaf Egap is an Assistant Professor at the Departments of Materials Science and NanoEngineering and Chemical and Biomolecular Engineering at Rice University. Her research group interests lie in the molecular-engineering and self-assembly of functional soft materials to create technologies with controlled photonic, electronic, and magnetic properties. She received a combined B.S. and M.S. degree in Chemistry and a minor in philosophy from Stony Brook University in 2005. She earned her Ph.D. in chemistry from the University of Washington in 2011 under the guidance of Samson A. Jenekhe. She then joined the laboratory of Timothy M. Swager at MIT as a postdoctoral fellow. Eilaf started her independent career at Emory University in the Chemistry Department and the Wallace H. Coulter Department of Biomedical Engineering at Georgia Institute of Technology/Emory University and was a member of the Winship Cancer Institute prior to joining Rice University. More information about Dr. **Egap** and her research can be found [here](#).

Her review for this special issue is titled “Light-Mediated Polymerization Induced by Semiconducting Nanomaterials: State-of-the-Art and Future Perspectives”. Article DOI: [10.1021/acspolymersau.1c00014](https://doi.org/10.1021/acspolymersau.1c00014).



Haritz Sardon is an Associate Professor at the University of Basque Country, where he is the leader of the catalysis and sustainable polymers group. He graduated from the University of Basque Country in 2011 with honors under the supervision of Lourdes Irusta and Fernandez Berridi before joining the group of James L. Hedrick at IBM—Imaden Research Center in California as a postdoc in 2012, where he spent 2 years. In 2014 he returned to Spain with a Spanish Ministry grant and joined POLYMAT as group leader. His group's research focuses on the preparation of new functional polymeric materials using sustainable polymerization processes. Specifically, his investigations involve the use of green polymerization processes such as monomers from plastic recycling, reagents from renewable sources, or the use of less hazardous organocatalysts. More information about Dr. **Sardon** and his research can be found [here](#).

His article for this special issue is titled “Enhanced and Reusable Poly(Hydroxy Urethane)-Based Low-Temperature Hot-Melt Adhesives”. Article DOI: [10.1021/acspolymersau.1c00053](https://doi.org/10.1021/acspolymersau.1c00053).



Jonathan Barnes completed his B.S. and M.S. degrees in chemistry at the University of Kentucky in 2006 with Robert Grossman before working a few years in industry for a biotech start-up company in Los Angeles, CA. In 2010, Jonathan started his graduate studies at Northwestern University (NU) as a National Defense Science and Engineering Graduate Fellow under the tutelage of Fraser Stoddart. While at NU, Jonathan developed a new class of stable organic radicals, as well as new macrocycles for binding polycyclic aromatic hydrocarbons. In 2014, Jonathan moved to the Massachusetts Institute of Technology as an HHMI postdoctoral fellow of the Life Sciences Research Foundation in Jeremiah Johnson's group, where he investigated new sequence-defined polymer methodologies and combination drug-loaded nanoparticles for cancer treatment. In 2016, he began his independent career in the Department of Chemistry at WUSTL, where his group is focused on synthesizing new functional polymers to make redox-responsive photodynamic materials, targeted polymeric nanomaterials for drug combination therapies, and developing novel topologically complex polymers and materials influenced by the mechanical bond. More information about Dr. **Barnes** and his research can be found [here](#).

His article for this special issue is titled “Photoinduced Electron Transfer and Changes in Surface Free Energy in Polythiophene-Polyviologen Bilayered Thin Films”. Article DOI: [10.1021/acspolymersau.1c00036](https://doi.org/10.1021/acspolymersau.1c00036).



Kwan W. Tan joined Nanyang Technological University, Singapore, as an Assistant Professor in the School of Materials Science and Engineering in 2017. He received his bachelor's degree at Nanyang Technological University in 2006, master's degrees from the Massachusetts Institute of Technology and National University of Singapore and in 2008 and 2009, respectively, and then gained his Ph.D. in 2014 under the direction of Ulrich Wiesner and Michael O. Thompson, all in

materials science. He conducted postdoctoral research at Cornell University with Ulrich V. Thompson and Yang Shao-Horn from 2015 to 2017. His research group's current interests are the design and generation of self-assembled multifunctional hybrid and mesoporous systems and their associated phase behaviors under nonequilibrium conditions. More information about Dr. **Tan** and his research can be found [here](#).

His article for this special issue is titled "Transient Laser-Annealing-Induced Mesophase Transitions of Block Copolymer-Resol Thin Films". Article DOI: [10.1021/acspolymersau.1c00040](https://doi.org/10.1021/acspolymersau.1c00040).



Robert Göstl started his chemistry studies at the Humboldt-Universität zu Berlin in 2006 and obtained his diploma degree in 2011 in the group of Stefan Hecht. Thereafter, he began his doctoral studies in the same group working on photoswitchable diarylethenes, which he concluded with his doctoral degree in organic and bioorganic chemistry (*summa cum laude*) in 2014. In 2015, he started working on polymer mechanochemistry in his postdoctoral research at the Eindhoven University of Technology under the guidance of Rint P. Sijbesma until 2016. Robert Göstl is currently leading an independent research group at DWI – Leibniz Institute for Interactive Materials that develops molecular tools to understand and harness mechanical force in polymer materials. He unifies concepts of synthetic organic chemistry, polymer chemistry, as well as photochemistry and -physics to design and synthesize force-responsive molecules that allow the understanding and improvement of the mechanical properties of polymers. More information about Dr. **Göstl** and his research can be found [here](#).

His article for this special issue is titled "Gated Photoreactivity of Pyrene Copolymers in Multiresponsive Cross-Linked starPEG-Hydrogels". Article DOI: [10.1021/acspolymersau.1c00011](https://doi.org/10.1021/acspolymersau.1c00011).



Robert J. Hickey is currently an Assistant Professor in the Department of Materials Science and Engineering at The Pennsylvania State University. He received his B.S. and Ph.D. in Chemistry at Widener University (2007) and the University of Pennsylvania (2013), respectively. At the University of Pennsylvania, he worked in So-Jung Park's lab and researched the coassembly of inorganic nanoparticles and amphiphilic diblock copolymers. Before starting at Penn State in 2016, he was a postdoctoral researcher (2013–2016) in the laboratories of Frank Bates and Tim Lodge at the University of Minnesota. His research group investigates equilibrium and nonequilibrium chemical and self-assembly methods to create functional, responsive, and multiscale polymeric materials. More information about Dr. **Hickey** and his research can be found [here](#).

His article for this special issue is titled "Lewis Adduct-Induced Phase Transitions in Polymer/Solvent Mixtures". Article DOI: [10.1021/acspolymersau.1c00024](https://doi.org/10.1021/acspolymersau.1c00024).



Tarak K. Patra is an Assistant Professor of chemical engineering at the Indian Institute of Technology Madras. He received his B.Sc. (Honors) in Physics from the University of Calcutta, Kolkata in 2004, and his Ph.D. in chemical engineering from the Indian Institute of Technology Kanpur, in 2014 under the supervision of Jayant Singh. He subsequently carried out his postdoctoral studies at The University of Akron (2015–2017) under the supervision of David Simmons, and thereafter at the Argonne National Laboratory (2017–2019) under the supervision of Sankaranarayanan Subramanian. His research expertise lies in development of theory, simulation, and machine learning techniques for advancing the current understanding and design of polymers and soft matter. His current research interests are in polymer electrolytes, polymer nanocomposites and sequence-defined polymers. More information about Dr. **Patra** and his research can be found [here](#).

His review for this special issue is titled "Data-Driven Methods for Accelerating Polymer Design". Article DOI: [10.1021/acspolymersau.1c00035](https://doi.org/10.1021/acspolymersau.1c00035).




Xiaodan Gu received B.S. in Chemistry from Nanjing University in 2008. He then moved to the USA and obtained his Ph.D. from the Department of Polymer Science and Engineering at the University of Massachusetts Amherst in 2014, focusing on the self-assembly of block copolymers and their lithographic applications with Thomas P. Russell. Subsequently, he did postdoctoral studies at Stanford University and SLAC National Accelerator Laboratory with Zhenan Bao and Michael F. Toney, where he studied the morphology of roll-to-roll printed electronics using real-time X-ray scattering at various synchrotron beamlines from 2014 to 2016. He is currently a Nina Bell Suggs Endowed Assistant Professor from the School of Polymer Science and Engineering at the University of Southern Mississippi. He is also a codirector for the Center for Optoelectronic Materials and Devices. His current research interests revolve around various fundamental polymer physics phenomena related to conjugated polymers and their derivative devices. His group studies the structure, dynamics, and morphology of conjugated polymers and aims to link their molecular structures to their macroscopic properties through advanced metrology with an emphasis on scattering techniques. More information about Dr. Gu and his research can be found [here](#).

His article for this special issue is titled “Directly Probing the Fracture Behavior of Ultrathin Polymeric Films”. Article DOI: [10.1021/acspolymersau.1c00005](https://doi.org/10.1021/acspolymersau.1c00005).

We extend our sincere thanks and congratulations to these Rising Stars. We would also like to thank the referees for their input in reviewing these manuscripts and to you, our readers, for your support—we hope you enjoy this special issue as much as we do!

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Notes

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