



## Special issue: Rising Stars in Polymer Science 2022

Keiji Tanaka<sup>1</sup>

Received: 28 July 2022 / Accepted: 28 July 2022 / Published online: 7 November 2022  
© The Society of Polymer Science, Japan 2022

We are pleased to announce the winners of Rising Stars in Polymer Science 2022 as young influential. *Polymer Journal* has been enriched by the complex of wonderfully talented and diverse groups of these young scholars in addition to outstanding teams of well-established senior researchers. They bring a variety of new insights, both personal and professional, to the task of better understanding polymer science and engineering. Here they provide us with an array of novel observations drawn from such disciplines as synthesis, structure and physical properties and functions and applications. We believe our readers will appreciate the opportunity to learn new voices in this special issue.

### Daisuke Aoki Chiba University

Daisuke Aoki currently serves as an Associate Professor in the Department of Applied Chemistry and Biotechnology, Faculty of Engineering, at Chiba University. He obtained his Ph.D. from Tokyo Institute of Technology in 2014 under the tutelage of Prof. T. Takata. Between 2014 and 2017, he served as a specially appointed Assistant Professor in the group of Prof. T. Takata. From 2017 to 2022, he was an assistant professor at Tokyo Institute of Technology in the group of Prof. H. Otsuka. From 2018 to 2022, he also served as Japan Science and Technology Agency (JST) PRESTO Researcher. In 2022, he was appointed to his current position at Chiba University. His research is focused on the functional polymers with applications in materials science, the topological polymers, and the polymer recycling system. He has received the Award for Encouragement of Research in Polymer Science (2017) and The Young Scientist Lecture

Award of the Kansai Regional Chapter (2020) from the Society of Polymer Science, Japan.

### Rajashekar Badam Japan Advanced Institute of Science and Technology

Rajashekar Badam completed M.Sc in Chemistry from Sri Sathya Sai Institute of Higher Learning, India in 2011. He received his Ph.D. in Materials Science from Japan Advanced Institute of Science and Technology (JAIST) with an “outstanding graduate award for the year 2016” in the area of carbon based electrocatalysis. Further he worked at Toyota Technological Institute as Postdoctoral fellow. In April 2018 he joined Matsumi lab, JAIST as Asst. Professor and since Oct 2020 he has been promoted to Sr. Lecturer in the same group. He has around 25 international publications and 10 patents (granted/pending) to his credit. His key research interest lies in organic-inorganic hybrid energy materials as catalysts, cathode material for metal air batteries, anode materials for Li-ion batteries and polymer binder materials for battery application.

### Yu-Cheng Chiu National Taiwan University of Science and Technology

Yu-Cheng Chiu joined the Department of Chemical Engineering at National Taiwan University of Science and Technology (Taiwan Tech). as a tenure-track assistant professor since August 2017. Currently, his major interests are the elastic and self-healing semiconducting materials, soft organic devices including transistor and transistor memory, and morphology characterization by synchrotron technique. Prior to joining the faculty, Yu-Cheng was a postdoc in the Zhenan Bao research group at Stanford University when he devoted on the research of intrinsically stretchable/healable semiconducting polymer and high-performance OFET by solution shearing technique. Before moving to Stanford, he received his Ph.D. degree under the supervision of Prof. Wen-Chang Chen in December 2012 from the Chem. E at National Taiwan University and then stayed in the same group for his first postdoctoral research until Oct. 2014. He also experienced international internship

---

**Supplementary information** The online version contains supplementary material available at <https://doi.org/10.1038/s41428-022-00692-2>.

✉ Keiji Tanaka  
hpj@spsj.or.jp

<sup>1</sup> Professor, Kyushu University, Fukuoka, Japan

program as a Ph.D. student in 2010 and special appointed assistant professor position in 2018 for polymerization research in the group of Prof. Toyoji Kakuchi and Prof. Toshifumi Satoh at Hokkaido University.

### **Yuya Doi**

#### **Nagoya University**

Yuya Doi received his Ph.D. degree under the supervision of Prof. Yushu Matsushita and Assoc. Prof. Atsushi Takano from Nagoya University in 2016. He worked as a Program-Specific Assistant Professor in the group of Prof. Hiroshi Watanabe at Kyoto University in 2016–2017, and was a visiting scholar in the group of Prof. Dimitris Vlassopoulos at FORTH, Greece in 2017. Then, he worked as a postdoctoral researcher at Nagoya University (in the group of Prof. Yushu Matsushita) from 2018, and at Forschungszentrum Jülich, Germany (in the group of Prof. Stephan Förster) from 2019. Since 2020, he has been an Assistant Professor at Nagoya University working with Prof. Yuichi Masubuchi and Assoc. Prof. Takashi Uneyama. His research interest is fundamental physical properties of model polymers studied by rheological and scattering methods.

### **Yuuka Fukui**

#### **Keio University**

Yuuka Fukui received Ph.D. degree from Keio University in 2012 under the supervision of Professor Keiji Fujimoto. She was a JSPS research fellow (DC2) from 2010 to 2012. She joined the laboratory of Professor Keiji Fujimoto at Keio university as a research associate in 2012 and was promoted to an assistant professor in 2017. Her research interests focus on the design and synthesis of polymeric materials (particles, porous materials, membranes) and organic–inorganic hybrid materials inspired from biological systems. Her current research also includes development of functional materials to aim for applications in drug and cosmetic delivery systems and tissue engineering.

### **Mikihiro Hayashi**

#### **Nagoya institute of technology**

Mikihiro Hayashi received his Ph.D. degree from Nagoya University (Prof. Yushu Matsushita group) in 2015. During his doctor course, he had been selected as a JSPS research fellow (DC2) and experienced researches in ESPCI Paris-Tech (Prof. Ludwik Leibler) and in Shanghai Jiao Tong University (Prof. Xinyuan Zhu). He then re-joined Ludwik Leibler's group as a postdoc, and experienced another postdoc in Prof. Masatoshi Tokita in Tokyo institute of technology. In 2017, he became an assistant professor in Prof. Akinori Takasu group (Nagoya institute of technology), and currently manages his own laboratory as a PI. His research interest is the design of functional cross-linked

materials. As recent awards, he won the SPSJ polymer research encouragement award (year—2019) and SPSJ award for the outstanding paper in Polymer Journal sponsored by ZEON (year—2021).

### **Asae Ito**

#### **Kanazawa University**

Asae Ito is an assistant professor under the Koh-hei Nitta's laboratory; Polymer Physics Laboratory. She has received her B.S. in Chemistry in Tokyo University of Science in 2010, and M.S. in Tokyo Institute of Technology in 2012. She joined in R&D section of SHARP corporation and engaged in the fabrication of OLED devices (2012–2016). Then, she went on to Japan Advanced Institute of Science and Technology (JAIST) and obtained Ph.D. under the supervision of Prof. M. Yamaguchi in 2019 on polymer rheology. Her major interests are the correlation between structure and mechanical properties in glassy as well as semicrystalline polymeric materials.

### **Tomohiro Miyata**

#### **Tohoku University**

Tomohiro Miyata received his B.S. in 2013 and Ph.D. in 2018 from the University of Tokyo. After working as a JSPS postdoctoral researcher at Tohoku University, he got a post of Assistant Professor at Tohoku University in 2019. He received several awards, including Young Scientist Award from the Japanese Society of Polymer Science and Dean's Award FY2017 for the Best Doctoral Student from the School of Engineering, the University of Tokyo. He has worked on ceramics and liquid analysis using TEM techniques since 2013, and engaged in atomic- and nano-scale analysis on polymeric materials since 2018 in Jinnai group at Tohoku University.

### **Yuta Nishina**

#### **Okayama University**

Yuta Nishina obtained his Ph.D. degree in Engineering from Okayama University in 2010. Then, he became an independent assistant professor at Research Core for Interdisciplinary Sciences, Okayama University, and was promoted to associate professor in 2014 and research professor in 2018. He has also been appointed as visiting professor at Florida State University (2011), Nanyang Technological University (2011–2012), University of Strasbourg (2017), and Osaka University (2017–2020). His research activities include JST PRESTO (2013–2017), JST CREST (2018—present and 2020—present), and Adjunct Professor at University of New England. He is currently working in multi-discipline research based on organic chemistry, such as nanocarbon production and functionalization, biomedical, catalysis, and energy-related devices.

**Yasunari Tamai****Kyoto University**

Yasunari Tamai received his PhD from Kyoto University in 2013 on the excited state dynamics in nanostructured polymer systems. He joined the Optoelectronics group at the University of Cambridge as a postdoctoral fellow under the supervision of Prof Sir Richard Friend, where he focused on ultrafast charge separation at organic semiconductor heterojunctions. Since 2016, he has been an Assistant Professor at Kyoto University. From 2018 to 2022, he was also a JST PRESTO researcher. His current research interests include exciton and charge dynamics in organic semiconductors, particularly conjugated polymers.

**Ye Zhang****Nanjing University**

Ye Zhang is currently an associate professor at the College of Engineering and Applied Sciences at the Nanjing University. She received her Ph.D. degree in Macromolecular Chemistry and Physics from the Fudan University in 2018 and then joined the Harvard Medical School as a postdoctoral research fellow. Her research focuses on the development of soft electronics including batteries, sensors, and bioelectronic devices.

**Huie Zhu****Tohoku University**

Huie Zhu is an assistant professor in Graduate School of Engineering, Tohoku University. She received her B.Eng. (2008) and M.Eng. degrees (2011) from Zhengzhou University, China. Then, she obtained her Ph.D. degree in Applied Chemistry from Tohoku University in 2014 under the supervision of Prof. Masaya Mitsuishi. After that, she worked shortly as a postdoctoral researcher with Prof. Masaya Mitsuishi in Institute of Multidisciplinary Research for Advanced Materials (IMRAM), Tohoku University until 2015 and then became an assistant professor in the same institute. From 2020, she started her current position. Her research interests are development of siloxane-based hybrid polymer materials under

mild conditions for various applications such as adhesives and thermally stable coatings and nanostructure control of ferroelectric polymers at interfaces for improved performance. She has received several awards from academic organizations and conference committees, such as the Promotion and Nurturing of Female Researchers Contribution Award from the Japan Society of Applied Physics (2019) and the Award for Encouragement of Research in Polymer Science from The Society of Polymer Science, Japan (2020).

**Biao Zuo****Zhejiang Sci-Tech University**

Biao Zuo received all his degrees from Zhejiang Sci-Tech University (Hangzhou, China); Chemistry (BSc, 2008), Physical Chemistry of Polymers (MSc, 2011) and Textile Materials (PhD, 2014). After completing the Ph.D. degree, he took a lecturer position at the Department of Chemistry, ZSTU. In 2017 and 2021, he was promoted to associated professor and full professor, respectively. He has worked for a while at Princeton University (2018–2020) and Kyushu University (2016) as a visiting scholar. He is also a principal investigator (PI) at Key Laboratory of Surface & Interface Science of Polymer Materials (SISPM) of Zhejiang Province. His research focuses mainly on molecular dynamics, glass transition, viscoelastic relaxation, rheology and tribology of polymers at surface, interface and under confinement, e.g., ultra-thin films. He has been awarded Chinese Chemical Society (CCS) Young Chemist Award (2021) for the contribution of “Revealing molecular mechanisms of polymer dynamics at surfaces and interfaces”. He is also a recipient of Excellent Young Investigator of NSFC (2021).

**Compliance with ethical standards**

**Conflict of interest** The author declares no competing interests.

**Publisher's note** Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.