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Interview

An Interview with Prof. Kei Hashimoto

e-Journal of Soft Materials Editorial Office

Prof. Kei Hashimoto*

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CV

Kei Hashimoto received his Ph.D. in Science from the University of Tokyo in 2016. He then worked as a JSPS Research Fellow at Yokohama National University (2016–2017), where he later served as a Project Assistant Professor until 2021. He subsequently held the same position at the University of Tokyo from 2021 to 2023. Since 2023, he has been an Assistant Professor at Gifu University. His research focuses on soft polymer materials, including ion-conductive gels and supramolecular networks. He aims to develop environmentally friendly and mechanically robust materials for use in energy and sensing applications.

Honors:

- Award for Encouragement of Research in Polymer Science, The Society of Polymer Science, Japan (2025)
- Bridgestone Soft Material Frontier Award: Encouragement Award, The Society of Rubber Science and Technology, Japan (2025)

Interview

Could You Please Tell Us Your Scientific Background and Main Research Area?

I began my research career in the group of Prof. Shibayama at the Institute for Solid State Physics, the University of Tokyo, where I studied polymer gels—materials consisting of polymer networks swollen with solvent. My main interest was in exploring their microscopic structures using X-ray and neutron scattering techniques, and in correlating these structures with macroscopic mechanical properties. I was also fortunate to learn about ionic liquids and solution chemistry from Dr. Fujii (now at Yamaguchi University), which later shaped the direction of my own research. Currently, I focus on developing gel systems in which the solvent plays an active role, using scattering techniques to investigate their hierarchical structure and functionality.

What Got You Interested in This Research in the First Place?

What first drew me to this field was the unexpected complexity hidden within seemingly simple materials. Gels may appear soft and homogeneous to the naked eye, but I was fascinated to discover that they contain rich internal structures on the molecular and mesoscopic levels. The ability to "see" these invisible features through X-ray and neutron scattering left a strong impression on me as a graduate student. That experience sparked a lasting interest in uncovering how such internal structures relate to the mechanical and functional properties of soft materials.

Would You Like to Share with Us What Impressed You Most in Your Career Development and Research Life?

One of the most memorable experiences in my research career occurred during my graduate studies, when a large earthquake disrupted our planned neutron experiments. As a result, I had to pursue a completely new project on ion gels using ionic liquids—an unfamiliar field for me at the time. Faced with experimental challenges and inconsistent data, I struggled to make progress. In a moment of frustration, I abandoned the original plan and tried a completely different approach based on a simple idea. Surprisingly, it worked. That experience taught me that progress doesn't always come from persistence alone—sometimes, stepping sideways or even escaping from a stuck mindset can open new paths. Looking back, I believe that this unexpected detour was what ultimately allowed me to continue in research.

Where Do You Get the Latest News about Your Research Area, or Where Do You Take Inspiration From?

Sometimes, I get inspiration in my dreams—literally. When I spend too much time thinking about a research problem, it often shows up in my dreams, usually in strange or metaphorical forms. Of course, I also follow journals, attend conferences, and talk with collaborators, but some of the most unexpected ideas seem to come when I'm not actively looking for them. I've come to realize that the boundary between thinking and dreaming can be surprisingly thin when you're deeply immersed in research.

Considering the Progress in Your Research Area, Could You Please Share with Us What Challenges and/or Developments You Think May Be Encountered in the Coming Years?

Although our understanding of the relationship between structure and properties in soft materials has steadily grown, we are still far from being able to control these relationships at will. In recent years, materials are increasingly expected to meet multiple demands simultaneously—such as environmental safety, functionality, and mechanical robustness—but current systems often struggle to satisfy all of these at once. I believe that overcoming this limitation may require not just incremental improvements, but a major conceptual breakthrough—something that allows us to fundamentally rethink how we design and integrate multiple functions into soft material systems.

What Attracts You to Join the Editorial Board of the e-JSM?

Joining the editorial board of e-JSM was my first experience serving in such a role, and I saw it as an opportunity to broaden my perspective and gain experience in academic publishing. Through this involvement, I've come to better understand the challenges of managing a journal, such as maintaining quality, encouraging submissions, and ensuring timely peer review. These insights have been valuable, and I hope to continue learning and contributing to the journal while deepening my understanding of the editorial process.

What Do You Think of the Future of the e-JSM?

Given its open-access format and use of English, I believe e-JSM has the potential to serve as a unique bridge between the Society of Rubber Science and Technology, Japan, and the broader international research community. By leveraging these characteristics, the journal can help promote the work of Japanese researchers more widely while also attracting contributions from abroad. I hope that e-JSM will continue to play a role in facilitating global exchange, particularly in areas where soft materials research intersects with industrial applications such as elastomers.