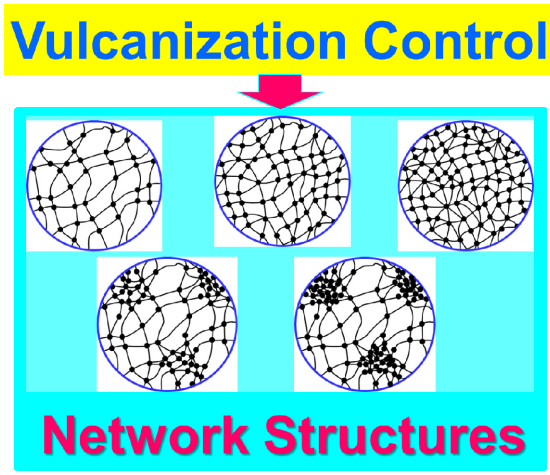
New Insights into Vulcanization Control for Rubber Science and Technology

Yuko Ikeda*[a,b]

[a)]*Faculty of Molecular Chemistry and Engineering, Kyoto Institute of Technology*
[b)]*Center for Rubber Science and Technology, Kyoto Institute of Technology*

The sulfur cross-linking is a very important key governing properties of rubber products. High performance rubber products cannot be prepared even after the addition of a superior filler, if a three-dimensional network structure is not formed. Therefore, it is now necessary to more deeply research the mechanism of sulfur cross-linking reaction in order to achieve a paradigm shift of rubber science and technology. In this keynote lecture, sulfur cross-linking reagents are shown to play important roles not only to link the rubber chains but also to control the network morphology. Particularly, the importance of inhomogeneity control in the sulfur cross-linked rubber network is emphasized for materials design.

*E-Mail: yuko@kit.ac.jp



Author Biography:

Yuko IKEDA is now a professor of Faculty of Molecular Chemistry and Engineering, Kyoto Institute of Technology. In 1991, she received the Doctor Degree of Engineering from Kyoto University. In 2014, she got the 29th Oenslager award. Her research focuses on rubber & elastomer science and technology. Her current research topics are fundamental studies on the sulfur cross-linking and reinforcement of rubbers by using new analytical methods. Characterization of natural rubbers are also studied by using synchrotron X-ray analyses.