

Title **Challenge for Carbon Neutrality
through Regional Collaboration**

Speaker Prof. Yoshiko TSUJI

Director & Professor of Environmental Science Center, The
University of Tokyo/

**Time&
Date** Chair of Committee for carbon neutral innovation by regional
collaboration, The Society of Chemical Engineers, Japan

10:00 AM (JST), Friday, February 21st, 2025



Abstract

Efforts are accelerating worldwide to achieve net-zero greenhouse gas emissions by 2050, with multifaceted approaches including technology, policy, and regional collaboration. Achieving net-zero emissions requires a transformation in various sectors, such as realizing net-zero in the energy transition, achieving net-zero mobility through electrification, and attaining net-zero in manufacturing. Among these, achieving net-zero in manufacturing presents the greatest challenges.

In scenarios for achieving net-zero emissions, industries involving carbon as a material include steel production, where coke made from coal is used to reduce iron ore; chemicals, which produce plastics, rubber, and synthetic fibers from crude oil; cement, made from calcium carbonate; and paper and pulp, made from wood pulp. Therefore, it is necessary to synthesize renewable chemicals or establish entirely new manufacturing methods, which is why these industries are classified as "Hard to Abate."

By leading the world in achieving net-zero emissions in Hard to Abate industries, it is possible to drive the revitalization of strong manufacturing as a source of competitive advantage. In this presentation, I will outline the concept of a carbon cycle that enables the use of independent carbon resources, moving away from reliance on fossil resources, and summarize the amount of hydrogen required for this carbon cycle.

About the Speaker

Professor Yoshiko TSUJI is engaged in research on nano- to micro-structural control of functional thin films and their application to information and energy devices, as well as the creation of scientific principle of environmental safety at R&D sites where technology and humans are intricately interrelated. Now she is challenging to grasp the whole picture of the future society and to find the key to solutions through cooperation among local industries and local communities, aiming to realize a carbon neutral society in 2050.

Registration https://zoom.us/webinar/register/WN_HD3lvy9jQsmsaXowLoMAwA

Host Prof. Tatsumi Ishihara

Contact I²CNER · Q-PIT Office of Research Support Services,
Research Support and Public Relations
TEL: +81 92 802-6935
Email: iq-kenkyu@jimu.kyushu-u.ac.jp

