

Hydrogen Industry Overview and Active Site Study of PGM-free ORR Catalyst

정훈택, 세종대학교 화학과

Climate change caused by greenhouse gases poses a threat to human life. In cope with this, each country is developing and implementing roadmaps to achieve carbon neutrality (carbon net-zero) by 2050. Hydrogen is considered a crucial substance to achieve this carbon neutrality. In this presentation, I will present how hydrogen can contribute to carbon neutrality. Growing hydrogen industries are also to be introduced.

In the latter part of this presentation, I will talk about an active site study of PGM-free oxygen reduction reaction (ORR) catalysts for proton exchange membrane fuel cells (PEMFCs). Clarifying the active site of the PGM-free catalyst has been considered a challenging problem. To address this issue, we applied various analytic methods, particularly nuclear resonance vibration spectroscopy (NRVS) to identify the active site.