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Zeolite-based deNO_x Catalysts for Photocatalytic Decomposition and Selective Catalytic Reduction

Prof. Haijun Chen

(Nankai University)

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<http://www.cat.hokudai.ac.jp/access.html>



Abstract

Zeolite-based catalysts are highly active for nitrogen oxides (NO_x) abatement, via direct decomposition reaction of NO_x into N₂ and O₂, as well as selective catalytic reduction of NO_x into N₂ with the co-existence of reductants such as ammonia and hydrocarbon. In this talk, I will introduce metal ion doped zeolites as an effective photocatalyst for the direct decomposition of NO_x under UV light irradiation. Also, I will share my experience for the development of copper-containing small-pore zeolite NH₃-SCR catalysts for Euro VI, as well as our recent research on MeOH-SCR in order to overcome the drawbacks of NH₃-SCR deNO_x process.

Biography

Haijun Chen is currently a professor in the Department of Nano-Micro electrics at Nankai University. He obtained his B.S. in Chemical Engineering from Jiangnan University in 1998, and Ph.D. (2008) in Osaka Prefecture University with Prof. Masakazu Anpo. After working in Mitsubishi Chemical Science & Technology Research Center (2008–2013), He joined Dalian Institute of Chemical Physics (DICP), Chinese Academy of Sciences in 2014 as research fellow, and moved to Nankai University in 2016. He has published >40 peer-reviewed papers, and has been authorized >40 patents. His current research interest is focused on environmental catalysis, particularly in the development of advanced catalytic materials for exhaust gas treatment and sustainable energy applications.

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