

## Professor Kwan-Young Lee (李寬榮)

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### Current Research Interest

Prof. Lee is interested in heterogeneous catalysis and chemical reaction engineering. He has been involved in studies of heterogeneous catalysts for the chemical production from unconventional raw materials, environmental catalysis, spectroscopic characterization of the catalyst, nano-scale catalysis, etc. Heterogeneous catalysis for the production of chemicals from unconventional sources includes extra heavy oil cracking into light/middle distillate, biomass conversion to chemicals such as lignin decomposition and C<sub>1</sub> chemistry, technologies to convert gas to liquid (GTL) or chemicals such as Fischer-Tropsch (FT) reaction, water gas shift reaction (WGSR), syngas to methanol, methanol-to-olefin (MTO), oxidative coupling of methane (OCM), coal-to-liquid (CTL) technologies, etc. Environmental catalysis includes the catalytic denitrification of waste water, deNO<sub>x</sub> catalyst and DPF catalyst for automobiles, CO<sub>2</sub> conversion, and the catalytic decomposition of CF<sub>4</sub> in the semiconductor manufacturing process. Spectroscopic characterization of catalysts reveals reaction characteristics from the analysis by solid-state NMR, IR, XPS, ESR, etc. Prof. Lee also performed researches about hydrogen production, fuel cell, plasma enhanced reaction engineering, inorganic materials processing, and so on.

### Biographical Information

Prof. Lee received his bachelor's and master's degree from the Department of Chemical Engineering, Seoul National University, Korea in 1983 and 1985, respectively, and Ph.D. from the Department of Synthetic Chemistry, University of Tokyo, Japan, in 1990 (Supervisor: Prof. Makoto Misono). After receiving his Ph.D., he worked as a research associate at the University of Tokyo from 1990 to 1994, and a visiting scholar at the University of Pittsburgh from 1991 to 1993.

Then, Prof. Lee became the assistant professor of the Department of Chemical Engineering in Korea University at 1994. He became the associate professor and the professor at 1996 and 2001 each, and he is the professor of the department of chemical and biological engineering in Korea University until now. He was also the visiting faculty at Pacific Northwest National Laboratory (PNNL), USA from 2000 to 2001 and 2008 to 2009.

He played and plays key roles in Korea University and Korean academic societies. In Korea University, he served as the Chairman of the Department of Chemical and Biological Engineering from 2002 to 2005, and became Vice Dean of Graduate School at 2004, serving until 2006. He also served as Vice President for Research Affairs and Head of Industrial and Academic Collaboration Foundation of Korea University from 2006 to 2008. He also played key roles in Korean academic society. He became the President of Seoul Renewable Energy Consortium at 2005, and he was the member of Committee on State-led Technologies of National Science and Technology Council from 2008 to 2010. He also served as the Director of Division of Chemical and Material Science and Technologies and Division of Nano and Convergence Technology in National Research Foundation of Korea. Furthermore, he organized Green School (Graduate School of Energy and Environmental Policy and Technologies) with Korea Institute of Science and Technology (KIST) and he is serving as vice president of Green School from 2012 and president from 2016. He is a member of the National Academy of Engineering of Korea from 2016. He is now Dean of Graduate School of Management of Technology and KU-KIST Graduate School of Converging Science and Technology of Korea University.

He also participated in various domestic and international academic societies. He is the member of the Korean Institute of Chemical Engineers, Korean Society of Industrial and Engineering Chemistry, Korean Chemical Society, Korea Society for Energy Engineering, as well as American Chemical Society, Chemical Society of Japan, and Catalysis Society of Japan. He is also the Editor of Catalysis Surveys from Asia, Associate Editor of Korean Journal of Chemical Engineering, and former editor of Journal of Industrial and Engineering Chemistry. He is a Korean delegate for IACS (International Association of Catalysis Society) from 2012.

