

**Title** BMW Hydrogen Technology

**Speaker** Dr. Monterey R. Gardiner  
 Liaison Manager (Hydrogen Technology and Homologation)  
 BMW Group Japan



**Date & Time** Friday, September 11, 2015 4:30 p.m.

**Place** Open space Hall, 2th floor, Center for Co-Evolutional Social Systems(CESS),Ito campus, Kyushu University

### Abstract

Long range, short refueling times, zero emissions: hydrogen fuel cell drive systems point the way to the future of BMW eDrive technology. The BMW Group has been conducting research and development work in the field of hydrogen fuel cell drive systems for over 15 years. A collaboration with the Toyota Motor Corporation launched in 2013 further accelerated progress towards a goal of finalizing approved components for a Fuel Cell Electric Vehicle (FCEV) by 2020. The fuel cell converts hydrogen into electric energy and water vapor and enables locally emission-free driving enlivened by the dynamics customers expect of a BMW – plus long-distance capability and short refueling times. It therefore represents the ideal next layer of BMW eDrive technology. Over the long term, the hydrogen fuel cell drive system will become an integral element of Efficient Dynamics technology, allowing the BMW Group to add further variety to a portfolio of drive systems which can be adapted flexibly to different vehicle concepts, and both customer and legal requirements worldwide. Furthermore, the hydrogen fuel cell drive system offers scope for integration into custom-fit vehicle architectures. Future FCEVs will therefore benefit from extensive freedom in the development of innovative design and space-related solutions, similar to that enabled by the LifeDrive architecture underpinning BMW i cars with eDrive.

### About the Speaker

Dr. Monterey R. Gardiner has a decade of experience in Hydrogen (H<sub>2</sub>) technology and energy management positions. As a Liaison Manager for BMW Group Japan in Tokyo he supports homologation, nurturing technology development partnerships and scouting new technology opportunities. October 2014 he moved from U.S. Department of Energy managing H<sub>2</sub> and renewable energy grid integration opportunities and supporting techno-economic analysis. Following “3’11” he was a Mike Mansfield Fellow at METI and NEDO, supplemented by time at the Japanese Diet and J-Power investigating industry/government policy-making processes in light of the 3E’s of energy policy. 2007 Dr. Gardiner joined DOE managing H<sub>2</sub> storage and delivery R&D projects to advance technology and update long-term cost and efficiency targets for the H<sub>2</sub> Fuel Cell Technologies Office. 2004 Dr. Gardiner completed his doctorate (Transportation Technology and Policy) from UC Davis Institute of Transportation Studies and started his energy centric career at the California Fuel Cell Partnership. His multiple responsibilities included lead safety engineer ensuring safe operations and improving the H<sub>2</sub> first responder program while he developed a range of collaborations from local to international in safety and public outreach. He then transitioned to managing Hyundai’s fleet of California H<sub>2</sub> vehicles for rapid technology development and supported corporate strategy via California regulation analysis: California Air Resources Board (Zero Emission Vehicle Mandate) and Energy Commission (Renewable Portfolio Standard). He is driven by continuous evaluation of an effective policy intersection between renewable energy and hydrogen technology to enable and accelerate the transition to zero carbon communities.

**Host:** Prof. Petros Sofronis

For registration, please visit our website:  
<http://i2cner.kyushu-u.ac.jp/>

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