I²CNER Seminar Series

On-Site Only

International Institute for Carbon-Neutral Energy Research (WPI-I²CNER)
Kyushu University

Title **Systems for large scale hydrogen storage and delivery**

Speaker Prof. Kazuhiro Nogita
Nihon Superior Centre for the Manufacture of Electronic Materials (NS CMEM), School of Mechanical & Mining Engineering, University of Queensland

Date 10:50 AM (JST), Tuesday, November 26th, 2024

Venue I²CNER hall, I²CNER Bldg.1, Ito campus, Kyushu University

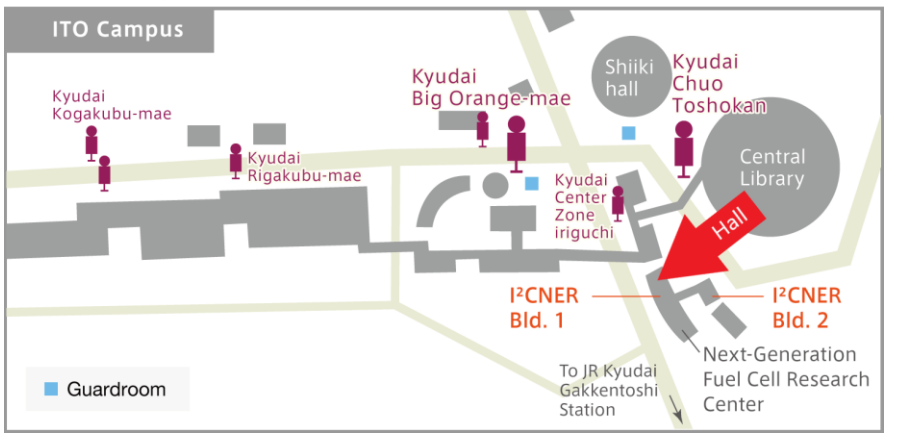
This seminar will be held on-site only. Please note there are no online or hybrid sessions.

Abstract

Significant research has occurred recently that has contributed to an understanding of how to reversibly store hydrogen safely and efficiently. In 2002 I became aware, through following international literature, that the Mg-Ni system was a suitable candidate for hydrogen storage applications. I applied my experience in solidification control and characterisation of eutectic microstructures to investigate bulk casting as means of producing a suitable alloy from this system. The research was novel in the field of hydrogen storage alloys as it resulted in a commercially viable product that could be economically cast, in bulk, to produce a nano-scale microstructure with acceptable kinetics of hydrogen absorption and desorption. The alloy that was developed also displayed a spontaneous protective oxidation reaction preventing the release of hydrogen from the alloy in a compromised storage system. This research resulted in the development of a spin-off company, Hydrexia Pty. Ltd. in 2005. Hydrexia attracted over $20m from investors including Air Liquide, and employed many full time staff in Queensland.

About the Speaker

Dr Nogita graduated as an Engineer in Japan in 1990 and worked in the nuclear power industry with Hitachi Ltd. He was awarded a PhD from Kyushu University in 1997. He migrated to Australia in 1999 after accepting a position at the University of Queensland, where he became the founding director of NS CMEM in July 2012 as well as project manager of the University of Queensland – Kyushu University Oceania project (UQ-KU project) and "Hydrogen Energy" theme co-leader for ARC Training Centre in Energy Technologies for Future Grids. He is also an invited Professor at Kyushu University and research advisor at the University of Malaysia Perlis. His research is in three major areas, namely hydrogen-storage alloys, lead-free solders and Li-ion batteries. He holds 20 international patents and has authored over 250 refereed scientific papers. His research has been acknowledged with several awards/fellowships, including a Queensland Government Smart Futures Fellowship and he was instrumental in the establishment of a spin-off company, Hydrexia Pty. Ltd.



Registration https://forms.office.com/r/YsPffB7g7D

Host Prof. Aleksandar Staykov

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