Obituary of Prof. Yasutake Teraoka

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Yasutake Teraoka, Professor at the Department of Molecular and Material Sciences (MMS), Interdisciplinary Graduate School of Engineering Sciences, Kyushu University has unfortunately died recently aged only 56. He was an outstandingly talented scientist and a highly regarded lecturer to two generations of students.

Yasutake Teraoka was born in Himeji, Japan on June 2nd, 1958, and died at his workplace at the Chikushi Campus of Kyushu University on 2nd July, 2014 due to a severe heart failure.

Yasutake Teraoka received his Bachelor, Masters, and Ph.D. degrees in 1981, 1983 and 1988, respectively from Kyushu University, Japan. His Ph.D. thesis was entitled 'Studies on Oxygen-sorptive Property and Oxide Ion Conductivity of Defective Perovskite-type Oxides'. In 1983, he became a Research Associate at the Department of Materials Science and Technology, Graduate School of Engineering Sciences, Kyushu University and moved to Nagasaki University as an Assistant Professor (1987-89), Associate Professor (1989-99), and Professor (1999-2001). Professor Teraoka's interest in research and teaching compelled him to re-join the Department of Energy and Materials Sciences, Faculty of Engineering Sciences, Kyushu University as a Professor in 2001. He had served as the Dean of the Interdisciplinary Graduate School of Engineering Sciences and Faculty of Engineering Sciences (2006-09), Vice-president (2009), Director of Research and Education Center of Carbon Resources (2009-2012), and Director of the Research Center for Synchrotron Light Applications (2009-2014). He had initiated the Collaborative Graduate School Program for Global Human Development in Energy and Environmental Science and Technology under the CAMPUS Asia EEST program of MEXT, Japan and served as the Program Coordinator until its inaugural to his death. CAMPUS Asia EEST is an Master Course program which includes an international double degree program between Kyushu University, Pusan National University and Shanghai Jiao Tong University. His research interest was the development of a sustainable society that is in harmony with our global environment which requires technology that is compatible with environmental conservation (symbiotic science and technology) and its basic theories, and ensures a stable energy supply. His laboratory has been engaged in education and research on new materials, devices, and systems directed toward new energy technologies and environmental clean-up technologies, which harness the chemical properties of composite metal oxides and other functional inorganic materials.

He has published 212 articles in peer-reviewed journals and more than 200 papers in international conference proceedings and co-authored 4 handbooks. His most celebrated work was on the mixed ionic-electronic conductivity of $La_{1-x}Sr_xCo_{1-y}Fe_yO_{3-\delta}$ perovskite-type oxides which was published in *Materials Research Bulletin*, Vol. 23, Issue 1, pp. 51-58, January 1988. Several other articles which are considered as breakthrough papers with high citations include:

(i) Oxidation catalysis of perovskites - relationships to bulk structure and composition (valency, defect, etc.), *Catalysis Today*, Vol. 8, Issue 2, pp. 175-199, December 1990.

(ii) Influence of constituent metal cations in substituted $LaCoO_3$ on mixed conductivity and oxygen permeability, *Solid State Ionics*, Vol. 48, Issue 3-4, p. 207-212, November 1991.
(iii) Simultaneous catalytic removal of nitrogen oxides and diesel soot particulate over perovskite-related oxides, *Catalysis Today*, Vol. 27, Issue 1-2, pp. 107-113, January 1996.
(iv) Synthesis of La-K-Mn-O perovskite-type oxides and their catalytic property for simultaneous removal of NOx and diesel soot particulates, *Applied Catalysis B: Environmental*, Vol. 34, Issue 1, pp. 73-78, October 2001.
(v) Catalytic autothermal reforming of methane and propane over supported metal catalysts, *Applied Catalysis A: General*, Vol. 241, Issue 1-2, pp. 261-269, February 2003.
(vi) H_2S poisoning of solid oxide fuel cells, *Journal of the Electrochemical Society*, Vol. 153, Issue 11, pp. A2023-A2029, 2006.
(vii) Catalytic decomposition of N_2O over CeO_2 promoted Co_3O_4 spinel catalyst, *Applied Catalysis B: Environmental*, Vol. 75, Issue 3-4, pp. 167-174, September 2007.

The total number of his citations is 4596 out of his 158 quoted papers in Scopus with an h-index of 34. Honours awarded to him included the Catalysis Society of Japan Award in 1995 and the Adsorption Society of Japan Award in 1998 among many other awards.

During his academic career at Kyushu University, he had supervised 28 undergraduate final year students, 53 Masters of Engineering students and 12 doctoral students and also acted as a mentor for his students. Several of his graduates are now working as full professors in various academic institutions or as R&D managers in industries throughout the world.

He is survived by his wife Hiroko, his children Toshiaki, Saori and Yukari. On behalf of his colleagues, friends and students I wish to offer our deepest condolences to his family members and heartiest thanks to Prof. Yasutake Teraoka for his diligent help and inspiring passion.