

A tribute to Professor Su-II Pyun on his 65th birthday and retirement from Korea Advanced Institute of Science and Technology

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This special issue of the *Journal of Solid State Electrochemistry* is dedicated to Professor Su-II Pyun to celebrate his 65th birthday and to appreciate his enormous contribution on the advances in understanding interfacial phenomena in the field of materials electrochemistry.

He was born and spent his childhood at Jeju Island, Korea, blessed with a beautiful nature. As a boy, who might play on the seashore and find pebbles before the ocean, he has been fascinated by nature and the fundamental questions about it eventually made him join the Physics Department of Seoul National University, Korea. His special love for materials physics and chemistry led him to continue his study in the RW Technischer Hochschule Aachen, Germany as a recipient of the scholarship from Nordrhein-Westfalen, one of the German states, where he

earned the M.Sc. and Ph.D. degrees in Metallurgy and Materials Science. He spent more than 6 years as a research associate in Metallurgical Thermodynamics Group, RW Technische Hochschule Aachen. He returned home to answer the call of his native country in 1976 and became professor of Materials Science and Engineering at Korea Advanced Institute of Science and Technology. He was visiting professor at Case Western Reserve University, University of Minnesota in USA, Max-Planck-Institut für Eisenforschung, Universität des Saarlandes, Technische Universität Clausthal-Zellerfeld, RW Technische Hochschule Aachen in Germany, and Hokkaido University in Japan. It should be especially noted that he established a strain-induced stress corrosion cracking model in mild steel at MPI Düsseldorf with Dr. K. Bohnenkamp and Prof. H.-J. Engell at the beginning of the 1980s. He also started to develop a coupled diffusion and diffusion/migration model for hydrogen transport through passivating oxide film at the University of Minnesota with Prof. R.A. Oriani from 1986 and continued it about for 10 years.

He always asks himself the fundamental questions on the electrochemical phenomena such as corrosion and energy conversion. He strives to find the answers strictly through the scientific eyes that mankind has developed, including mathematics, physics, chemistry, geometry, and even philosophy. These bids to hear the voices from the deep bottom led to radical improvements in the understanding of what really happens during corrosion/passivation of metals and during atom insertion into metals and metal compounds. In particular, the study on the factors governing hydrogen/lithium transport through the metal hydrides/metal oxides has given the answer to the unusual transport behaviors that could not be clearly explained before, yielding ten articles that have been cited more than 40 times. The application of fractal geometry to energy

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conversion systems is another of his pioneering contribution, giving new insight into the analysis of nonlinear transport phenomena. And he is recently attracted by the statistical approaches on the corrosion process. His more than 300 peer-reviewed journal articles remind me of one of his mottoes, “Scholar communicates and plays only with a pen”. The intrinsic value of his contribution cannot be described properly, but four monograph chapter articles in the *Modern Aspects of Electrochemistry*, *Corrosion Research Frontiers*, and a lot of review articles in the prestigious journals, including the *International Materials Review*, tell us the profundity of his work.

As a respected teacher, he wrote many invaluable books based on his 30-year scientific experience as an electrochemist. This includes *Equilibrium Thermodynamics of Materials at Non-pVT System*, *Fundamentals of Corrosion of Metals and Their Application into Practice*, *Fundamentals of Batteries and Their Application into Practice*, and *Outlines of Electrochemistry at Materials*, which have been giving a considerable impact on people in both the school and industry systems. He has a good reputation for advising his graduate students as well. His patient one-on-one training has been enough for the students to become competent electrochemists. More than hundred of his former and current research group members are very proud of their Ph.D. or M.Sc. degrees obtained

under Professor Pyun’s supervision. Though he is 65, he is still pouring his enthusiasm to educate his students as ever the same.

The story about him would be incomplete without the remarks on his personal tastes. He is so energetic to jog everyday and to climb a mountain and play soccer together with his young group members. He is often absorbed in reading the Oriental and Occidental classics on philosophy and history. He likes reciting Korean verses in parties and enjoys quoting metaphors to remark about the world. All of these tastes must closely relate to his favorite phrase, “Hwal-In-Sim-Bang,” which stands for “cultivating the mind by improving the body and vice versa”, taught by Toegye Yi Hwang in the 15th century, one of the greatest scholars of Joseon Dynasty, the last Korean dynasty.

I felt highly honored for being asked to write this editorial and am really enjoying doing it. And it is a great pleasure for me to contribute to the special issue with a paper. I believe all of the other participants feel the same way.

Professor Pyun, this is a humble tribute of the highest respect for your lifelong devotion to research and education from your disciples and colleagues. I hope you enjoy it. May you be with us in good health for many years to come. Finally, although the contemporaries might not fully understand your passion and the value of your work, I am certain the owl of Minerva is never missing your preeminence.