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Photon online

Alumnus Admires the Success of Madame Curie

“When I was a child, probably 11 or 12, I read a biography on Madame Curie,” said alumnus Youngchan Kim. “I don’t remember the author, but her story inspired me. Her dedication to Physics (and science in general) impressed me a lot. I didn’t know what Physics was about, but after reading it, I found that I was better at math and science than at literature or something else. So I decided to study physics.”

Youngchan Kim was born and raised on Jeju Island, Korea. After receiving his bachelor's degree, in Physics and Mathematics, from Korea Advanced Institute for Science & Technology, he came to the University of Maryland to obtain his Ph.D.

Prior to attending UMD, Kim had never left Korea. The transition was frightening; however, he found comfort from the friendly people in the department. It was also a benefit to be in an area with such a large Korean community. He applied to Maryland because of his interest in studying Nonlinear Dynamic and Chaos. However, he worked under Dr. Michael Fisher on Phase Transitions.

“Working under Dr. Fisher, was probably the best situation I could have imagined to have had,” said Kim. “I was fortunate to have him as my advisor. From his courses and advice, I learned a lot of physics, how to conduct research and how to be a good physicist.”

After receiving his Ph.D. in 2002, Kim worked as a postdoc, at Maryland, for three years. An important and original chapter of Dr. Kim's thesis was published three years ago in Physical Review Letters in an article titled, Precise Simulation of Near-critical Fluid Coexistence (YC Kim, M.E. Fisher and E Luijten) *91* 065701:1-4 (2003). The original paper reported on a scaling technique for extracting results of unprecedented precision and detail from finite-size Monte Carlo simulations. The article has now been highlighted, in the second edition of David P. Landau and Kurt Binder's "Guide to Monte Carlo Simulations in Statistical Physics." It appeared as a case study in chapter six, section 6.1.4, titled, Near Critical Coexistence.

“One of my professors of Chemical Engineering, whom I collaborated with during my Ph.D., has used my thesis for his current research,” said Kim. “He asked me for comments and some advice and honestly, it made me feel good to know that someone appreciated my work.”

Last summer he accepted a position as a research fellow at the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK), for the National Institute of Health, working for Dr. Gerhard Hummer. He is currently working on understand the mechanism of proton pumping by an enzyme called Cytochrome c oxidase inside mitochondrial or bacterial membranes. This enzyme pumps protons, which are later used to produce food molecules for various proteins. He is also working on a project to build a simple model for simulating protein-protein interactions.

Year's later, after achieving some success of his own, Kim's decision to study Physics has proven to be the best one.

“I love what I do,” said Kim. “It is always exciting and challenging to find out that you don't know much about Nature.”

If you are interested in contacting Dr. Youngchan Kim,, please send your messages to the Editor, who will be happy to forward your questions and comments.