

CONFIDENTIAL



UNIVERSITY OF MASSACHUSETTS
AMHERST

159 Goessmann Laboratory
Amherst, MA 01003-9303

Department of Chemical Engineering

Peter A. Monson
Professor

Phone: (413) 545 0661
Fax: (413) 545 1647
Email: monson@ecs.umass.edu

December 31, 2003

RECOMMENDATION FOR HYUNG-JUNE WOO

Hyung-June Woo was a postdoctoral research in my group from the spring of 2001 until fall 2002. Hyung-June joined my group from Iowa State where he was a postdoc with Xueyu Song. Prior to that he completed his PhD at Berkeley with David Chandler. He is a truly outstanding young researcher - perhaps the most technically capable postdoc or graduate student with whom I have ever worked. I am enthusiastic in my support for his candidacy for a faculty position.

Hyung-June worked in two areas with me. In the first we modeled the behavior of fluids in porous glasses using lattice models. When Hyung-June joined the group I asked him to bring the expertise he had developed at Berkeley on modeling bicontinuous microemulsions to bear on the developing a lattice model for the microstructure of porous glasses. He did this very quickly and generated some really quite remarkable results, which for the first time showed that adsorption/desorption hysteresis in a Vycor glass could be described using statistical mechanics. He followed that up with some work on the phase behavior and dynamics of fluids in porous glasses. I regard Hyung-June's work in this area as among the best that my group has ever produced. He also worked on solid-solid and solid-fluid phase equilibrium for hydrogen bonded molecules using a quite novel density functional approach. This theory is capable of describing significant aspects of the ice phase diagram. Based on Hyung-June's eighteen months of work here we coauthored four journal articles (in Langmuir, Journal of Chemical Physics and Physical Review E) and one conference paper. Hyung-June also did some work on a variational formulation of nonequilibrium thermodynamics for hydrodynamic pattern formations. This he did by himself and published it in Physical Review E.

Hyung-June is a first rate theoretician. He grasps things very quickly and is a really independent thinker. He is also very skilled with both mathematical analysis and computations. I would judge Hyung-June's writing skills as the best I have ever seen in a junior coworker - quite remarkable for someone for whom English is a second language. His oral presentations are also excellent. I think he will make an excellent teacher.

I have read Hyung-June's research plan. It is clearly not a derivative product of his previous research work. It shows him to be capable of defining important research problems and I know he will be able to solve them. I was really delighted with what Hyung-June produced while at UMass but I expect to see even more impressive achievements as I watch his development as an independent scholar. I am familiar with the work of most of the young researchers in molecular modeling in Chemical Engineering. I would have to say that Hyung-June is technically better than most of them. If he lacks anything it is that he could be a little more aggressive in asserting himself. However, I expect that he will learn to do this as his career develops.

In conclusion, I am delighted to support Hyung-June Woo's application for a faculty position. He has the ability to carry out deep scholarship on really important problems. He will also be a fine teacher and I'm sure an excellent colleague. Hyung-June Woo will be a great credit to any department fortunate enough to recruit him.

Sincerely,

Peter Monson .

Peter A. Monson
Professor