

October 31, 2018

Dear Members of the Search Committee:

The advertisement of a faculty position of the Department of Physics and Astronomy drew my attention. I have been applying principles of physics to elucidate seemingly complicated biological systems for more than 15 years. I respectfully submit this letter of interest, for I believe my experience in the teaching of general physics and graduate level courses have provided me with the background necessary to successfully assume the position.

During my master's degree studies I examined the physical, structural, electrical and magnetic properties of amorphous polymers such as polyaniline, and became interested in techniques that can directly visualize the ultrastructure of generally disordered materials at nanometer scale. My doctoral dissertation focused on ultrastructural variation in macromolecular structures of biological samples using electron tomography which has been increasingly employed to obtain detailed 3-dimensional structural information at nanometer scale. Through my research, I have developed various image processing, analyzing, and measuring tools for electron tomography, carried out modeling studies of biological processes crucial for brain and muscle functions, and improved a software package called EM3D, which has provided convenient, integrated design and image analysis environment for electron tomography.

During my graduate training in physics at Stanford University, I had been fortunate enough to serve as a teaching assistant for undergraduate and graduate level courses of physics such as Electricity, Magnetism, Optics, Mechanics, Statistical Mechanics, and Classical Electrodynamics. Through my participation as a teaching assistant, I have also developed confidence and an interest in teaching. My eight years as a postdoc and a research assistant professor in the Department of Biology at Texas A&M University have provided me with chances to work on projects of biological importance using electron tomography and modeling approaches and helped me to realize that physics can make significant contributions to biological sciences including physical sciences. My strong desire of teaching physics and extensive experiences in biology and physics will be useful in engaging students in active learning and critical thinking.

I am enclosing my curriculum vitae and other required documents. If you require any additional materials or information, I am happy to supply them. Thank you for your time and consideration.

Sincerely,

A handwritten signature in black ink, reading "Jung jae hoon", written in a cursive style.

Jae Hoon Jung
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