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Dec. 1st, 2002

To: Faculty Search Committee
c/o Prof. James Glazier
Dept. of Physics, Indiana University
Swain Hall West 117
Bloomington IN, 47405-7105

It is my great pleasure to provide recommendation for Mehrdad Mahmoudi Zarandi who is looking for a faculty position at the Physics Department at Indiana University in the area of Biophysics.

I have known Mehrdad since 1993 when we were both graduate students at Caltech. We have had numerous discussions about his research work and technical question arising in every day life. I have always been very impressed by his broad knowledge in various areas of engineering and science.

Since my current research in the area of microscale cooling and energy transport in nanoscale material is on the border of electrical & mechanical engineering and statistical physics, I have had various discussions with Mehrdad about optimization of energy transport mechanisms. He has been an invaluable resource who understands thermodynamics, fluid mechanics and energy processes at a very deep level. He can apply his knowledge to a field very different from his, and suggest various means to improve our devices. In addition, due to his previous industrial experience, Mehrdad has a very good grasp of practical problems and limitations. With a strong multi disciplinary background in chemical, mechanical and bioengineering, Mehrdad is an ideal candidate to do research on the emerging problems in biomedical field. During last year or so, we have been discussing about one of my recent research projects involving

DNA movement through nanopore membranes. Again, Mehrdad's deep understanding of biofluidics was very helpful to identify key issues in the modeling. Despite Mehrdad's extraordinary abilities and his genius from an early age, he has a very kind personality and it is always a pleasure to interact with him.

I have listened to Mehrdad's presentations. They are clear and very well organized. In particular, I remember a talk he gave about Non-equilibrium Thermodynamics to a broad audience of students and professors at USC couple of years ago. By giving detailed historical background and by a careful explanation of the foundations of thermodynamics, he delivered an impressive half an hour presentation without a single look at his notes!

Mehrdad's significant achievements in different fields, more notably his beautiful recent experimental and theoretical work on biofluid dynamic of heart demonstrates that he is an extremely gifted individual who shows great thoroughness, originality and creativity in his work. Mehrdad's talent is much broader than his scientific achievements. He has a keen interest in the broad impact of science on the society as can be seen from a very profound book he recently edited on Science and Progress. I give him my highest recommendation.

Please do not hesitate to contact me if you need any additional information.

Sincerely yours,

A handwritten signature in black ink that reads "Ali Shakouri". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

Ali Shakouri

Associate Professor of Electrical Engineering
University of California Santa Cruz

Brief Bio

Ali Shakouri

Ali Shakouri received his undergraduate degrees in physics and electrical engineering from University of Paris and Ecole Nationale Supérieure des Telecommunications de Paris, and his PhD from California Institute of Technology in 1989, 1990, and 1995 respectively. His thesis work in Prof. Amnon Yariv's group at Caltech was on electron transport in quantum well infrared photodetectors. His research interests are in optoelectronic devices, nanoscale heat and current transport, thermal imaging, nanowire-based energy conversion devices and integrated cooling of electronic components. He is a member of the Executive Committee for UC-SMART Program overseeing collaboration between University of California and semiconductor manufacturing companies. He is also a member of the Review Committee for Univ. of Calif., Campus-National Lab. Collaboration (CLC/CLE). Over the years He has served on multiple review panels for National Science Foundation's Division of Engineering, Division of Undergraduate Education and NSF/NASA programs. He is also the Technical Director for the Defense Advanced Research Project Agency (DARPA) project HERETIC/IMPACT, a multi university-industry collaboration (University of California Santa Barbara, Santa Cruz and Berkeley, Harvard University and Hughes Research Laboratories). Prof. Shakouri received the David and Lucile Packard Fellowship in Science and Engineering in 1999, and the NSF CAREER Award in 2000.