

Date: 31-10-2018

To,
Professor Robert V. Duncan,
President's Distinguished Chair in Physics,
Department of Physics and Astronomy,
Texas Tech University, USA

Dear Prof. Duncan,

I am Dr. Saurabh Bose, an experimental condensed matter physicist currently working as Senior Research Fellow and Principal Investigator in School of Physical and Chemical Sciences, University of Canterbury, New Zealand. With this letter, I would like to apply for the Assistant Professor position at Department of Physics and Astronomy, Texas Tech University (requisition 15145BR). My primary research interests are in low dimensional electronic systems, specially organic-inorganic hybrid nano-devices and Neuromorphic architectures for energy-efficient computation. The research vision, as outlined in attached document, is to utilize charge and spin degrees of freedom in hybrid nano-devices for understanding the fundamental laws governing nature and to develop real-world applications.

As Principal Investigator I am working on prestigious Marsden FastStart grant (NZ \$ 300,000) from Royal Society of New Zealand on project titled '*Brain inspired on-chip computation using self-assembled nanoparticles*'. This position with 50% research & supervision and 50% teaching responsibilities, coupled with 5+ years of postdoctoral experience in multi-cultural environment in Netherlands and New Zealand, has helped me grow as an academic. With my passion for research as well as teaching students in classroom/laboratories, I believe my growth opportunities at TTU are enormous. My academic experience augmented with the administrative and organizational exposure over years, has imparted me with useful skills, which I will be bringing to the department.

My long-term research vision is to establish a nanocluster and neuromorphic research center at TTU, which would be instrumental for research and innovation in low-energy electronics, which is assuming ever-increasing importance in society. For example, my recent S.K.Bose *et al.* report published in *Nature Nanotechnology* 2015 about first experimental demonstration of fully reconfigurable logic based on randomly distributed hybrid nanoscale components was extensively covered by multiple international science news outlets, including Nature news. The report is already cited more than 40 times in 2 years, and holds potential for useful applications.

In support of my application, I have attached detailed curriculum-vitae and other relevant documents. The letters of recommendation can be solicited directly from my Ph.D. and postdoctoral supervisors. If you require any additional material or information, I would be happy to provide them. Thank you very much for your consideration.

Sincerely,

Dr. Saurabh Kumar Bose
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Associate Investigator, MacDiarmid Institute for Advanced Materials and Nanotechnology, University of Canterbury, New Zealand
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