

To

**Professor Robert Duncan, The Search Committee Chair
Department of Physics, Texas Tech University**

Respected Professor and Chair of Search Committee

Subject: Application for the Associate Professor in Experimental Condensed Matter Physics at the Department of Physics @ Texas Tech University, Lubbock (15088BR) - Reg.

I am writing this with reference to the call for the Associate Professor position, in Experimental Condensed Matter Physics at the Department of Physics, Texas Tech University, Texas. I revised the website of the Department/University and found the astonishing achievements of the variously distinguished professors and really motivated to join TTU which is already classified as R1: "Highest Research Activity" University by the Carnegie Foundation. I am happy to mention that I fulfill most of the criteria's established in the call. Really I am waiting for an opportunity to collaborate with high-profile professors and intellectual giants like Prof's Robert Duncan (SC Chair), Stefan Estreicher, Luis Grave de Peralta, David Lamp, Charles Myles etc., @ TTU. As mentioned in the call as the preferred qualification:

.... We expect the new faculty members to establish and develop an internationally recognized and visionary research program in experimental condensed matter physics, broadly defined...

Having been served as a teacher under various conditions, environment, and countries for the last 30 years, I can very well understand the pulse of the students from various countries. Wish to continue and improve my research in the below-mentioned areas

1. Functional semiconducting and metal nanostructured materials for energy conversion devices (including experimental and simulations)
2. Nano-photocatalytic materials for the water treatment/ environmental applications
3. Core-shell and oxide semiconductor nanostructures for the biomedical & biosensors applications
4. Renewable and sustainable energy (incorporating all types of energy sources)

In order to supplement the characterization of the materials – wish to mention that in the year 2009 established a high-resolution microscope laboratory in Cinvestav. Under this project I have taken training on the operation and maintenance of HRTEM (from Jeol), FESEM (from Carl Zeiss), SPM (from Jeol) and dual beam FIB (from Jeol) and recently I have procured TESCAN-SEM with STEM attachment.

....Considerable resources are available at TTU to strengthen and. Candidates who have very strong records of scholarship supported by extramural funding and who have sponsored research to Texas Tech University are encouraged to apply....

This is a great opportunity for a new entrant with different vision and mission from a different country to TTU System. My fundraising capability is lucid from the mega project won in 2009 and 2016 for about \$ 55 Million (**about 4.6 Million USD**) and \$ 27 Million (**about \$ 1.7 Million USD**) Mexican pesos. I have executed about 16 projects from various funding agencies as PI. This expertise will help me to plan the use of resources available at TTU to strengthen infrastructure. **Regarding Interdisciplinary and collaborative research efforts:** My passion for interdisciplinary collaborative, diverse, and innovative efforts are well explicit from the projects I have obtained so far (listed in the CV) which elucidate my commitment to excellence. My collaborative nature (collaborators from about 5 or 6 different countries) and active Transdisciplinary research interest are reflected from about 140 International publications and more than 300 conference presentations. The acceptance of my research publications is comprehensible from >1600 citations and my inclusion as **Editor (JMSE)**, editorial board member/peer-reviewer in various international journals.

Strengths of my application oriented teaching and research are well explicit from the undergraduate and graduate courses which I've developed and offered at CIT (India), ITESM and Cinvestav (Mexico). Handled more than 20 different courses (listed in CV) from undergraduate to Doctoral level.

I wish to establish my research on energy harvesting materials especially the chalcopyrite and perovskites for photovoltaic applications and, nanocomposite hetero-structured materials for visible light photocatalysis. Both are my ongoing projects and I am sure I can attract funds and offer very good projects for students. I assure that I will establish an independent, externally funded vigorous research program; to mentor students and teach both undergraduate and graduate level courses and to engage in outreach and service activities in the Department of Physics @ the Texas Tech University.

I am confident that if provided a chance to serve at the Department of Physics @ Texas Tech University, I will try to bring laurels and glory to the Department/University in the academic as well as in International relations with my vast international exposure, I can establish strong ties with Latin American and European Universities.

It would please me greatly to be given the opportunity to bring my unique skills and attributes as an Associate Professor. I am quite sure you will find my credentials and references to be in order and that I would be a good fit for an Academic position at the Department of Physics, Texas Tech University.

I believe, I can prove my efficiency as I proved in my previous working places. Please feel free to contact me at your convenience for any clarification/interview.

Sincerely



Velumani Subramaniam

Mexico, 15th Oct 2018