

## Institute Lecture

**Speaker:** Professor Vishwanath Prasad, University of North Texas, USA



**Title:** ENERGY: HUMAN EVOLUTION TO PRESENT DAY CONFLICTS

**Date, Time and Venue:** Friday, 2<sup>nd</sup> August 2019, 6-7 PM, Lecture Hall Complex

### **Abstract:**

Natural selection of energy strategies, extrasomatic adaptation, and discovery and control of fire are at the root of human evolution, civilization, and culture. Farming and domestication of animals expanded the resources of energy available to humans. Conversion of wood to charcoal gave a controlled high-temperature energy source without which metals could not have been processed. Lack of energy and other resources made Europeans move east and westward, and also, led to the discovery and use of coal - a very high density energy source. Technologies that were created for the specific purpose of converting thermal energy of coal into various useful forms using metals brought industrial revolution that swept Europe in the eighteenth century, and are at the core of engineering. Advent of oil, a much more useful source of energy, advanced industrial revolution much further and made the countries far more dependent on one another. It is, therefore, not just a coincidence that technological discoveries/revolution have often been accompanied by international conflicts and deadly wars. The present lecture will examine long-time records of availability and use of energy resources, particularly fossil fuels that have dictated human behavior, and more often, poor-governance, disputes and conflicts. It will be shown that the correlation is indeed strong, and prosperity and security of countries such as India depend heavily on energy availability and utilization. Although environmental impact of fossil fuels and global warming are bringing countries together and use of renewables can greatly help, the exploration for new reserves of fossil fuels and search for new resources may create more global challenges.

### **About the speaker:**

Professor Vishwanath (Vish) Prasad is an eminent academician and administrator who has combined a distinguished research career with major pedagogical initiatives in engineering education. Professor Prasad's research spans applications of fluid and thermal sciences to transport in porous media, thermal processing of materials - growth of large, high quality silicon crystals to thin film processing and thermal sprays, and energy materials/devices. He has over 200 refereed journal publications apart from invited review articles and keynote presentations nationally and internationally. He is a long-time editor of Annual Review of Heat Transfer apart from editing a variety of symposium volumes, issues of archival journals, and a handbook of crystal growth. Professor Prasad is the recipient of the "Michael P. Malone International Leadership Award" from

the US Association of Public and Land-Grant Universities (APLU), “Educator of the Year Award” for contributions to engineering education to Hispanics, from HENAAC, and Academic Excellence Medal for contributions to engineering education in Latin America and the Caribbean, to name a few. He is a Fellow of American Society of Mechanical Engineers. Professor Prasad has held various academic leadership positions that include Associate Dean of Engineering for Research and Graduate Studies at the State University of New York, Stony Brook, Executive Dean/Dean of Engineering at Florida International University, and Vice President for Research and Economic Development at the University of North Texas. An alumnus of IIT Kanpur, Dr. Prasad started his academic career as a faculty at Columbia University and is presently a Professor of Mechanical and Energy Engineering at the University of North Texas.