

GANAPATI RAO MYNENI, PHD

EDUCATION

Indian Institute of Technology, Madras, India, Ph.D., Physics, 1980
Jawaharlal Nehru Technological University, Hyderabad, India, M.Sc., Engineering Physics, 1974
Andhra University, Visakhapatnam, India, B.Sc., Mathematics, Physics, and Chemistry, 1971

RESEARCH POSITIONS

Senior Staff Scientist, Jefferson Lab	1987 – Present
Visiting Scientist, Vikram Sarabhai Space Center, India	1983
Research Fellow, University of Southampton, UK	1980 – 1987
Guest Scientist, Fritz Haber Institute, Berlin, Germany	1977 – 1979
Project Associate, Indian Institute of Technology, Madras, India	1974 – 1980

HONORARY POSITIONS

Honorary Fellow, Indian Institute of Technology-Roorkee, India	2017 – Present
Board of Directors, Virginia Nuclear Energy Consortium Authority	2013 – 2017
Member, Virginia Energy Council	2014 – 2016
USA Coordinator of HBNI (India) – University of Virginia Collaborations	2009 – 2014
Board of Directors, ISOHIM	2003 – Present
Research Professor of Materials Science and Engineering, University of Virginia	2010 – 2013
Research Professor of Physics, University of Virginia	2003 – 2010
Adjunct Professor of Electrical Engineering, Old Dominion University	2012 – Present
Adjunct Professor of Physics, Old Dominion University	1997 – 2011
Professor of Mechanical & Nuclear Engineering, Virginia Commonwealth University	2011 – Present
Adjunct Professor of Physics, Virginia Commonwealth University	1996 – 1998
Adjunct Professor of Physics, Virginia Tech	1990 – Present
Chair, American Vacuum Society-Mid Atlantic Chapter	1996 – 2006
Chair, Cryogenics Society of America-Hampton Roads Chapter	1996
Chair, Cryogenics Committee of the Instrument Society of America	1992 – 1995

VIRGINIA STATE POSITIONS AND LEADERSHIP ACTIVITIES

- Appointed by two consecutive Governors to the Board of Directors of the Virginia Nuclear Energy Consortium Authority (2013) and to the Membership of the Virginia Energy Council (2014). Further, recently appointed as the Deputy Vice Chairman for Accelerator Driven Systems (ADS) and Molten Salt Reactor (MSR) Designs by the VNECA Board of Directors unanimously.
- Established the Virginia Accelerator-Driven Systems (ADS) Consortium and organizes International Workshops on ADS/Thorium Utilization.
- American Nuclear Society Life Member and served on the Technical Program Committee of the Eleventh International Topical Meeting - Nuclear Applications of Accelerators AccApp2013 Belgium.
- Served on the International Advisory Committee of the Thorium Energy Conference (TheC13) Geneva.

MAJOR CAREER CONTRIBUTIONS

- Established silicon (Si) diodes as highly reproducible and interchangeable cryogenic temperature sensors.
- Developed world's best cryosorption panels.
- Invented frost-proof cryogenic concrete for the storage of liquid natural gas (LNG).
- Created world's largest niobium thermal and mechanical properties database.
- Contributed towards reaching high accelerating gradients and enhanced quality factors in Nb cavities.

- Invented He adsorption-desorption leak detection principle and an extreme sensitivity He leak detector.
- Developed metal sponges for cryosorption pumping of H₂ and He to extremely low pressures.
- Invented a cryogenic level sensor and integrated cryogenic temperature-pressure, level-temperature sensors.
- Initiated a major program in cold electronics.
- Conceived and organized International workshops on Contamination-Its-Measurement and Control in Vacuum Systems, Extreme High Vacuum and Hydrogen in Materials and Vacuum Systems. The last workshop led to formation of a non-profit organization, International Symposium On Hydrogen In Matter (ISOHIM), which now sponsors International Accelerator Driven Systems and Thorium Utilization International Workshops biannually.
- Developed surface diffusion barriers for vacuum systems that improves the outgassing performance of these systems dramatically in a short period of time without high temperature bake-out.
- Invented high performance electron source electrodes.
- Invented ingot niobium technology which is now vigorously pursued world wide to improve the efficiency of superconducting radio frequency (SRF) linacs at reduced cost for world wide discovery science programs as well as new nuclear energy systems.

PATENT AWARDS AND SCHOLARSHIP

1. Frost Proof Cryogenic Concrete
 2. Cryogenic Liquid Level Measuring Apparatus
 3. High Sensitivity Leak Detection Method & Apparatus
 4. Metal Sponge for Cryosorption Pumping Applications
 5. Ultra High Vacuum Pumping System and High Sensitivity Helium Leak Detector
 6. Solid Diamond Field Emitter
 7. Sensitive Hydrogen Leak Detector
 8. Alternative Back Up Pump for Turbo Molecular Pumps
 9. Passivated Niobium Cavities
 10. Large grain Cavities from Pure Niobium Ingot
 11. Apparatus and Process for Passivating an SRF Cavity
- Two more patents, Contamination Free Ion Pumps and High Performance Accelerator Structures, are in the process.
 - Received a scholarship under the Indo-German Scientific Exchange Program to work with Prof. G. Klipping at the Fritz-Haber institute of the Max-Planck Society in Berlin, 1977 – 1979.

BOOKS EDITED

1. Science and Technology of Ingot Niobium for Superconducting Radio Frequency Applications, AIP CP-1697, 2015.
2. Symposium on the Superconducting Science & Technology of Ingot Niobium AIP CP-1352, 2011.
3. Single Crystal–Large Grain Niobium Technology, AIP CP-927, 2007.
4. Hydrogen in Matter, AIP CP-837, 2006.
5. Hydrogen in Materials and Vacuum Systems, AIP CP-671, 2003.

PUBLICATIONS

Authored/co-authored over 100 peer-reviewed publications on accelerator related technologies and ADS&MSR systems. https://www.researchgate.net/profile/Ganapati_Myneni