

**Environmental Engineering**

**and Earth Sciences**

**EEES Department Seminar**

**“Photovoltaics: sustainable energy conversion technology for sustainable global economic growth”**

**PRESENTED BY**

**Rajendra Singh**

**Place**: L.G. Rich Laboratory - Environmental Engineering and Earth Sciences

L.G. Rich Auditorium, Advance Material Center

**Date**  Friday, September 23, 2016

**Time**  **2:30 PM – 3:30 PM**

Abstract: Eradicating poverty and terrorism have risen in importance to the point that they are now equal to climate change as the greatest global challenges facing mankind today. The issues are complex and integrated. There is a direct correlation between crude oil prices and the key geopolitical and economic events of the time. Oil has turned out to be crucial in financing terrorist networks and activities. For sustainable global economic growth and solving the three challenges of climate change, terrorism and poverty, we must turn to free fuel-based solar and wind energy for building the future local direct current (DC) power-based electricity infrastructure. Without subsidies, the cost of AC power generated by photovoltaics (PV) has reached as low as $0.0291/KWH. Local DC power networks can produce savings of 50% in energy and capital when compared to centralized AC power generation, transmission, and distribution. Due to advancements in technology and volume manufacturing of electric vehicles, the cost of batteries is following the price reduction trend of PV modules. Very soon the cost of lithium ion batteries will be lower than the cost of hydroelectricity storage. A PV revolution has already started and will provide sustainable global economic growth. The objective of this seminar is to provide the overview of PV and the research opportunities



***Rajendra Singh*** is D. Houser Banks professor in the Holcombe Department ofElectrical and Computer Engineering at Clemson University. During oil embargo of 1973, he decided to do his PhD dissertation in the area of silicon solar cells. With proven success in operations, project/program leadership, R&D, product/process commercialization, and start-ups, Dr. Singh is a leading PV expert with over 37 years of industrial and academic experience of semiconductor and photovoltaic industries. He is fellow of the IEEE, SPIE, AAAS, and ASM. Dr. Singh has received a number of international awards. In 2010 Photovoltaics World selected him as one of ten global Champions of PV Technology. He is the recipient of the 2014 Society of Optical Engineering (SPIE) Technology Achievement Award. In April 2014, he was honored by US President Barack Obama as a White House “Champion of Change for Solar Deployment” for his leadership in advancing solar energy with PV technology.

***Refreshments following Seminar***