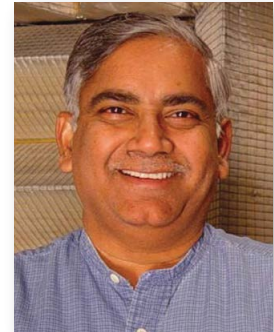


Solar Thermal Power

26 April 2019 – DRMI Auditorium – 1300

With Dr. Anjaneyulu Krothapalli

Don Fuqua Eminent Scholar Chair & Professor Emeritus of Mechanical Engineering at Florida State University (FSU)



Dr. Anjaneyulu Krothapalli

Abstract

Harvesting solar radiation and converting it into useful heat has been the subject of intense research because of its use in a wide variety of engineering applications. In early years of solar energy implementation, the direct conversion of solar radiation to electricity using Photovoltaics took the center stage and, except for the space applications, it was not considered for common use because of its cost. However, with recent advances in Photovoltaic manufacturing, the cost of solar electricity generation has plummeted to about \$0.07 per Kwh making it more affordable for everyday applications. Because photovoltaic power plants and wind farms are inherently intermittent, solar thermal heat storage and power generation will complement the existing renewable energy grid. Since storing electricity is not a particularly efficient process, and heat storage being far easier and efficient method, solar thermal becomes very attractive to large-scale energy production.

Many manufacturing industries use saturated steam at relatively low pressure. A novel flat solar panel, Multiple Parabolic Reflector Flat Panel Solar Collector, is described to heat a working fluid to a maximum temperature of 150 degrees C. The parabolic reflectors in the panel remain stationary, while the receiver moves to track the sun, thereby allowing for maximum energy collection with minimum amount of sun tracking.

Biography

Dr. Krothapalli was the Don Fuqua Eminent Scholar Chair & Professor Emeritus of Mechanical Engineering at Florida State University (FSU), and an Affiliated Professor of Energy at the Royal Institute of Technology (KTH), Sweden. He was the founding member and Chairman of the Mechanical Engineering Department at FSU from 1983 to 2002. He was a faculty member of the Aeronautics & Astronautics Department at Stanford University from 1981-1983. He earned his M.S. and Ph.D. degrees from Stanford University in 1978 and 1979, respectively. As an entrepreneur, he founded five start-up companies in California and Florida. Dr. Krothapalli is an expert engineer/scientist in the fields of Aeronautics and Renewable Energy with five US patents, and over 200 scientific papers. Dr. Krothapalli is a Fellow of the American Society of Mechanical Engineers and was a National Research Council Senior Fellow at NASA Ames Research Center.

