

# PUBLIC LECTURE SERIES

Low Carbon Green Technologies for Off Grid Power Generation using Renewable Energy for Developing Economies to Energize Dispersed Communities

**Wednesday, July 6, 2011**

**5:00 – 6:00P**

Carl A. Pollock Hall 4333 (CPH)

*Complimentary Refreshments will be served*

**Presented by the Waterloo Institute for Sustainable Energy**

University of Waterloo



**Public Lecture with Dr. S. Murthy**  
**Indian Institute of Technology, Delhi, India**

*Nearly two billion of the world's population, the bulk of which belongs to developing economies, do not have access to grid-fed electricity. Due to emission and climate change concerns, power capacity addition through fossil fuel based units, mainly for fast developing economies such as India and China, is getting restricted, forcing us to opt for widely available renewable sources such as solar, wind, small hydro and bio energy.*

*Optimists want 20% penetration of renewable energy in the electricity mix by 2020. Since both energy sources and targeted populations are dispersed with randomly varying source and loads, there are technology challenges to match the two. Can we think of an integrated generalized energy management system by networking the sources and loads through a micro-grid so as to prescribe solution to any given location? The talk aims to address these issues highlighting some of the successful efforts made in India. As a follow-up of a successful Indo-Canada workshop organized by UW and IITD (2009), it is proposed to take up some joint projects in this area for the global good. India has a massive power expansion program targeting an addition of 100GW under 'power for all' mission. India being 4<sup>th</sup> in the world in Renewable Energy (RE) installation has RE potential in wind (45,000 MW), small hydro (15,000 MW) and biomass/bioenergy (25,000 MW) apart from 35MW per sq km from solar PV & thermal energy. It has an ambitious off grid distributed and decentralized generation (DDG) program for rural electrification. Canada and India have initiated a Canada India Energy Forum following the signing of the energy MOU in November 2009 and the above projects deserve support from both the countries and responsibility for professionals to pursue.*

**Prof. Sreenivasa Murthy** received his Bachelors, Masters and Doctoral degrees in Electrical Engineering from Bangalore University, IIT Bombay, and IIT Delhi respectively. He joined IIT Delhi in 1970, became professor in 1983, and is presently CEA (Central Electricity Authority) Chair. He has held visiting positions at universities and industry such as: U. of Newcastle on Tyne, UK, U. of Calgary, IISc Bangalore, Ryerson Univ., Kirloskar Elec. Co. Bangalore, GE, Bangalore and CPRI Bangalore. Major responsibilities have included Chair EE Dept., IITD, heading a Research Institution, ERDA Baroda, and a Technical University, NITK Surathkal. He has written over 250 papers, supervised over 100 graduate theses, 80+ sponsored projects on energy converters & energy systems and 8 patents. His awards include ISTE Award (outstanding research), IETE/Bimal Bose Award (contribution in power electronics) and he is a Fellow of Indian National Academy of Engineering (INAE). Prof. Murthy has transferred technologies to industry relating to energy efficiency and electrical systems for bio, hydro, wind and wave energy. He has contributed significantly to engineering education in India with his passion for "Energy and Education". He was also coordinator for several international collaborations including a Canada-India S&T collaboration in Energy. He has visited several countries on professional engagements and has delivered over 150 popular and special invited lectures. He has served in professional societies such as IEEE, IEE/IET, IE(I), ISTE, IETE in several capacities and served on several national committees in India relating to government, academia and industry. He was general chair of IEEE conference, PEDES'96 (Power Electronics & Energy Systems) in Delhi, chair of the symposium on "Alternate Energy and Global Synergy" at Ryerson University, Toronto jointly with IEEE (2008), India Coordinator of Indo-Canada Workshop on "Electricity generation using renewable energy jointly organized by IITD and UW/WISE (2009) and general chair of INAE conference on "Research Policy for Sustainable Energy" (2009). At present he is visiting UW/WISE and Ryerson University to follow up on the outcome of the above technical events.

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