

Feb 15, 2018

“IT’S NOT ROCKET SCIENCE!”

The “Urj Svavalambi” Roadmap To Rural Energy Self-Reliance

ABSTRACT:

The enthusiastic surprise of the Chief of a Vancouver Island First Nations community back in 2006, was our first validation point for Micro Renewable Energy Systems. Our route went from Houston with undergraduate “Vomit Comet” Flight Tests, “NASA Means Business” Strategic Plan competitions, the Space Resources Roundtable, the 8th Continent Chamber of Commerce, to Vancouver Island, and a course that went from Georgia Tech AE to KSU College of Business to IIT Chennai to a book, Indian and US-based NGOs, the Global Indian Business Council, and a conference. This year it is literally lighting up Single-Teacher Schools in 50 Indian villages (50,000 villagers, 15,000 kids!) as we accelerate towards the next 659,950 villages, home to 70% of India’s population. Our “Urj Svavalambi” (Energy self-reliance) Roadmap starts with solar photovoltaics and power-tool-charging panels where kids learn in the evenings, to biogas, thermoelectrics, micro-wind turbines, intensified solar thermochemical hydrocarbon fuel, all the way to a clean self-sustaining and self-reliant rural economy. Our strategy connects exotic technologies with “limited markets”, to the immense grassroots-level “markets” of people who have to carry pots of water on their heads for miles every day, lacking basic access to energy. Except for our first PV and biogas installation, all others are/will be installed by villagers trained on village systems, leading to village-based small enterprise, and flying over infrastructure obstacles with our UAV technology (aerospace had to fly to the rescue somewhere in this story!..). That is our sustainability model at its first stage. A long way still to a hydrogen economy, but we are moving. Deep into technology, business, social sciences or just plain curious? Please come by and see how your ideas and expertise can help this very ambitious and all-inclusive endeavor.

BIOGRAPHY:

Professor Komerath has directed the John J. Harper Wind Tunnel and the Experimental Aerodynamics and Concepts Group at Georgia Tech’s Daniel Guggenheim School of Aerospace Engineering since 1990. His current research focuses on bluff-body aeromechanics, low-Reynolds number and high-altitude aerodynamics, and whole-field flow diagnostics. He is a 2002 Fellow of the NASA Institute of Advanced Concepts, Sam Nunn Senior Security Fellow, and 2004 Boeing Welliver Fellow. He has won Georgia Tech’s Outstanding PhD Advisor award, Outstanding Leadership Award for student guidance, and the 2015-16 AIAA/ASEE John Leland Atwood Awards for excellence in aerospace engineering education. He holds 3 US Patents, and has published 8 books including one on Micro Renewable Energy Systems, (2016) and over 420 papers. He has served as a founding panel member of the NASA-funded Eighth Continent Chamber of Commerce project to develop a Space Economy. He chairs SCV Inc, specializing in strategic concept development, serves on the executive board of the Global Indian Business Council and the World Association for Vedic Studies and chairs the TakshaShila Institute’s International Smart Village Alliance. He was recognized with the ‘Bharat Gaurav’ (Pride of India) by the Friends of India Society International in 2013.



Narayanan M. Komerath

*Professor
School of Aerospace
Engineering, Georgia
Institute of Technology,
Atlanta, GA*