Session IN-I: Invited Speakers I

Monday November 12, 9:40 am – Noon

"Fabrication of Novel Porous Materials for the Removal of Mercury from Waste Water"

Mohsen Manjili (University of Wisconsin Milwaukee & Water Technology Accelerator (WaTA), USA); Marcia Silva (University of Wisconsin Milwaukee, USA)

Abstract:

New materials with potentially enhanced adsorption properties were developed by functionalizing the surface of the natural porous material to fabricate graphene-based and sulfide-based treated porous material. The functionalized materials were characterized with Fourier Transform Infrared Spectroscopy (FTIR) and Raman spectroscopy. Batch experiment was employed to assess the efficacy for the removal of mercury with the adsorption isotherms being determined for the natural and treated porous materials. Results indicated that the loaded functional groups were not accessible to the mercury ions due to the pore blockage phenomenon. Predicted equilibrium concentration were consistent with experimental values.

"Advancing Systematic and Fundamental Changes in Agricultural Water Resources Management"

Amir Kordijazi (University of Wisconsin Milwaukee & Water Technology Accelerator, USA); Marcia Silva (University of Wisconsin Milwaukee, USA)

Abstract:

The Great Lakes is the world's largest surface freshwater resource, 20% of world and 85% of U.S. water. It has been polluted from land drainage sources. Phosphorous pollution is of concern since it is one of the main controlling factors in eutrophication that can cause severe water quality degradation which is detrimental to aqueous organs and public health. This talk will cover a sustainable and innovative method to reduce phosphorus pollution from water discharge of agricultural fields.

Speaker:

Amir Kordijazi received his master degree in Materials Engineering from Sharif University of Technology and now he is PhD candidate in Industrial Engineering at University of Wisconsin Milwaukee. He currently works as Research Assistant at Water Technology Accelerator of UWM conducting research on developing new and sustainable technology to reduce water contamination of agricultural, municipal and industrial wastewater.

SusTech 2018 Invited Presentations

Session IN-II: Invited Speakers II

Monday November 12, 4:00 – 5:00 pm

"Five Myths about Nuclear Power"

Van Snyder

Abstract:

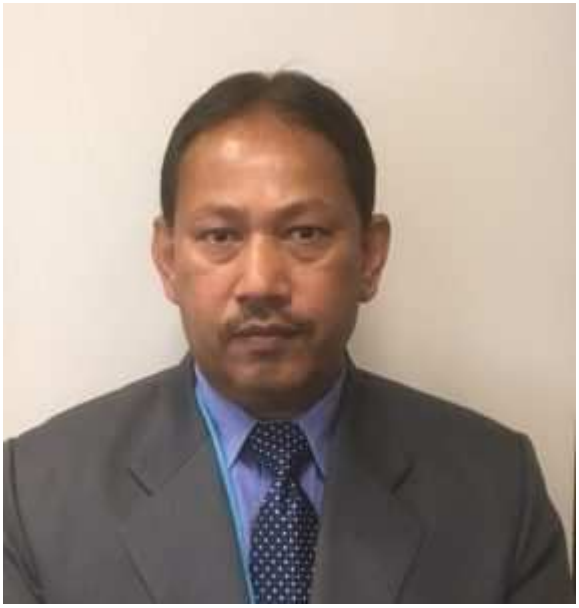
Many people have concluded that it is not possible to produce all the energy humanity currently consumes without using nuclear power. Yet many environmentalists reject it, citing five reasons: It's not safe, we don't know what to do with nuclear waste, it's too expensive, it leads to weapons proliferation, and there's not enough uranium anyway. These arguments will all be shown to be false.

Speaker:

Van Snyder is a 40% retired mathematician and software engineer who developed an abiding interest in nuclear power about twenty years ago. Success in learning and understanding rapidly accelerated upon reading "Smarter Use of Nuclear Waste" in December 2005 Scientific American, and "Plentiful Energy" by Charles E. Till and Yoon Il Chang, which also appeared in 2005.

"Solar PV system for Sustainable Community Development"

RP Singh, Department of Energy in UNIDO



Rana Pratap Singh is Industrial Development Officer, Energy System and Infrastructure Division, Department of Energy, United Nations Industrial Development Organisation (UNIDO). Having been with UNIDO since 2007, he is a renewable energy expert with over 23 years of experience. His work mainly relates to scaling-up renewable energy in many countries in the world via reinforcing policy, strengthening institutions, demonstrating projects and building national capacity. His experience ranges through assignments from World Bank, UNDO, Asian Development Bank, European Union and I/N/GOs. His contribution comprises several isolated and off-grid energy projects, authored manuals, prepared reports and published journal papers. He received the UNIDO Exemplary excellence award in 2012 for his contribution to renewable energy in Africa, Jean Pierre BRANS award in 2015 for his contribution to smart decision making on energy development and Champion for Promoting Organizational Change AWARD 2016.

SusTech 2018 Invited Presentations

Session IN-III: Invited Speakers III

Tuesday November 13, 10:00 am – 12:20 pm

"Empowering Communities with Low Cost Air Quality Monitoring"

Dominic Massetti*, Andrea Polidori**, Vasileios Papapostolou*, Brandon Feenstra*

*IEEE Life Senior Member
**South Coast Air Quality Management District, Air Quality Sensor Performance Evaluation Center

Abstract:

Air quality monitoring has been historically left in the hands of local government agencies and the EPA. The size and cost of air quality monitoring systems have limited their number in any given area and enabled only regional and mostly delayed responses to air quality issues and their attendant health consequences. This talk will describe how one at risk Southern California community has joined with the South Coast Air Quality Management District to implement low cost air quality monitoring through a collaboration enabled by an EPA Science To Achieve Results (STAR) Grant. 30 web enabled low cost air quality monitors have been installed within a community of 10,000 seniors and are providing particulate matter measurements to inform their real time activities and help monitor nearby potential pollution sources such as adjacent freeway traffic and power generation plants.

Speaker:

Dominic (Nick) Massetti is an IEEE Life Senior Member. He is currently the Electron Devices Society Representative to the Nanotechnology Council (NTC) AdCom, Chair of the NTC Regional Interest Groups Committee, and an officer of the IEEE Region 6 Orange County Section. He recently retired after a career spanning 45 years in the area of Semiconductor device and fabrication technology which included contributing solutions for Landsat satellite imaging at Hughes Aircraft, integrated circuit fabrication processes at Texas Instruments and NXP Semiconductors, and conducting worldwide IC foundry oversight for Seagate Technologies. He was the recipient of the 2015 IEEE Region 6 Central Area Outstanding Engineer Award and the 2017 Distinguished Service Award from the IEEE Nanotechnology Council. He received his Bachelor's Degree in Physics from St. Mary's College in Moraga, CA and his Master's Degree in Solid State Physics from UC San Diego. He currently consults in the area of intellectual property prosecution related to image sensor technology.

"Renewable Hydrogen Liquid Carrier to Compete with Fossil Fuels"

Barton Norton (KONTAK, Inc., USA)

Abstract:

KONTAK™ is an early-stage company in Seattle, Washington. Its founders have studied the hydrogen storage and transportation space for over ten years. They recently patented key elements to make large quantities of "green" hydrogen available safely at prices comparable to gasoline and diesel. Our talk will discuss the problems with implementing the Hydrogen Economy and our solutions to them.

Speaker:

Barton Norton is CEO, KONTAK, Inc. He is an inventor and entrepreneur who holds Masters Degrees from Cornell University (MEE 1966) and Carnegie Mellon University (MBA 1968). Norton invented the world's first digitally-controlled motion picture projector and KONTAK's Modular Fueling Station. He has worked in such diverse fields as digital medical imaging (CT Scanning and real-time ultrasound), precision metrology and computer automation, and, most recently a chemical solution for hydrogen storage and transportation.