EuroSciCon

Annual Summit on
Renewable & Sustainable Energy

August 13-14, 2018
Paris, France

Shiva Gorjian, Trends in Green chem 2018, Volume: 4
DOI: 10.21767/2471-9889-C1-008

SOLAR THERMAL POWERED DESALINATION TECHNOLOGIES: CHALLENGES AND PROSPECTS

Shiva Gorjian
Tarbiat Modares University, Iran

Freshwater scarcity is increasingly regarded as a global issue and systemic risk. At present, more than two-thirds of the world's population live in water scarcity regions which half of them live in the developing countries. Desalination can be considered as water insurance by adding new alternative water resource and therefore, eliminating the need for surface and groundwater. Most of the implemented desalination plants around the world are utilizing conventional energy sources. For this reason, as are becoming expensive to operate, are no longer sustainable due to the risks of the fossil fuels depletion and greenhouse gas emissions. Integrating renewable energy sources with desalination systems holds great promise for increasing water supplies in water-scarce regions. In the last few decades, several efforts have been directed in the use of different renewable energy sources to drive desalination plants, but several techno-economic challenges have remained. Solar assisted desalination has been the focus of considerable interest recently worldwide especially in countries lie on the solar belt such as MENA, India, and China. The potential of harnessing solar energy to heat is most efficient conversion. Although, solar thermal powered desalination plants have been proved technically, the combined solar and fossil fuels as the power source could be more cost-effective. Indirect solar desalination is more preferable for medium to large scale systems, whereas the direct techniques employing solar stills are more suitable for small-scale systems. Currently, solar-powered desalination plants cannot compete with the conventional ones regarding the produced water cost. But, with the current ongoing research, they remain a valid option for future desalination plants.

Biography

Shiva Gorjian has completed her PhD in Biosystems Engineering from Tarbiat Modares University in 2014 and Postdoctoral studies from Renewable Energy Research Institute (RERI) at Tarbiat Modares University. Her fields of studies are Solar Power, Energy Systems, Renewable Energy Powered Desalination, Hybrid Power Systems, Exergy Analysis and Modeling of the Energy Systems. She is the Co-director of the AdaptiveAgroTech, a professional network on Precision Agricultur and Renewable Energy Technologies. She has published more than 14 papers in the reputed journals and has been serving as an Editorial Board Member of the journal of *«Advances in Agriculture and Environmental Science»*.

Gorjian@modares.ac.ir