

2nd International Conference on
GREEN & SUSTAINABLE CHEMISTRY
&
International Conference on
PHOTONICS & OPTOELECTRONICS

July 15-16, 2019
Zurich, Switzerland

Multifunctional solar systems for cooling, heating and power generation

Roonak Daghigh
University of Kurdistan, Iran

Negative impact of fossil fuels on environment, global warming and low-efficiency energy conversion underscore the urgent need to achieve sustainable development. From a sustainability perspective, the increasing prices of energy and endeavor to manage the negative environmental impacts of conventional energy, the more efficient use of energy and design of energy efficient and multi-purpose systems which are design to produce combined cooling, heating, and electricity systems, the reduction in wasted energy, increase in heat recovery, the increase in a products life-cycle, the increased use of renewable energy sources will become an increasingly important part of green and sustainable chemistry. This presentation addresses the recent applications and advances on high efficiency and cost-effective solar systems and multifunction systems.

The combination of solar energy with trigeneration systems is essential for the implementation of future sustainable energy systems, therefore, with our increasing understanding of multipurpose systems it is now possible to design bi-directional studies that will mutually benefit both fields. To this end, critical solar system components are also highlighted for future research needs according to their specific advantages and drawbacks. Finally, some of the results obtained from several system which is use nanofluid-based direct solar collectors, solar system for heating and power generation (SCHP) and solar assisted combined cooling, heating and power (SCCHP) system which tested experimentally and theoretically under the meteorological conditions of Sanandaj city, Kurdistan, Iran for different applications are introduced and discussed.

Biography

Roonak Daghigh received her PhD degree (2011) in mechanical engineering from National University of Malaysia. She has also obtained his master and bachelor degrees in mechanical engineering and chemical engineering from University Putra Malaysia and Iran University of Science and Technology, respectively. She is currently associate professor and research deputy for the Faculty of Engineering, UOK. Before this, she was a director of the University of Kurdistan technology incubator center. She is the author of more than 60 journal/conference papers. Her current research interests include solar heating, solar cooling, solar heat pump, solar assisted drying, combined photovoltaic thermal collector, CHP and CCHP.

daghighm@gmail.com