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Dr. Esmail M. A. Mokheimer

Professor

Interdisciplinary Research Center for Renewable Energy and Power Systems (IRC-REPS)
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Executive Summary:

Dr. Esmail Mokheimer is a professor of Mechanical Engineering at KFUPM. His research interests are in the area of thermofluids and efficient energy conversion with a recent focus on the use of renewable energy in general, and solar energy in particular, in power generation, refrigeration and air condition and desalination. Dr. Mokheimer has published about 170 publications with more than 2,700 citations and granted 23 patents in the area of renewable energy utilization for co/multi-generational systems. Dr. Mokheimer has lead a 7-year collaborative research project with MIT investigating the thermo-economic performance of integrating CSP with gas turbine combined cycles. Dr. Mokheimer also has acted as the PI of KACST and NSTIP projects in addition to leading many other funded projects. Dr. Mokheimer has supervised many PhD dissertations, MSc Theses, and Senior design projects. Dr. Mokheimer is also acting as associate editor of the ASME transaction, Journal of Energy Resources Technology (JERT).

Education:

- PhD Mechanical Engineering [KFUPM, 1996]
- MSc Mechanical Engineering [ASU, 1989]
- BSc Mechanical Engineering [ASU, 1989]

Distinguished Projects

- *Esmail M. A. Mokheimer (PI), Mohamed A. Habib, Mohamed Mahmoud, Development of a Hybrid OTMR-Solar Assisted Thermal EOR System, DSR, KFUPM project # DF181017, completed.*
- *Esmail M. A. Mokheimer (PI), Bilal Queshi, M. Yaqub, Development and Assessment of a Solar based ORC-Ejector-Absorption Integrated System for Cogeneration of Power and Cooling, DSR, KFUPM project # IN151031, completed.*
- *Esmail M. A. Mokheimer (PI), Bilal Queshi, Performance analysis of a novel solar powered Rankine engine for multi-effect refrigeration, DSR, KFUPM project # IN141017, completed.*
- *Esmail M. A. Mokheimer (PI), Mohamed A. Habib, Mohamed Mahmoud, Development of a Carbon-Free Solar-Assisted ITM Oxy-Combustion EOR System, DSR, KFUPM project # IN151010, completed.*
- *Esmail M. A. Mokheimer (PI) of a KFUPM Fast Track Project (FT/2002/10) entitled: Development of Solar Gas Turbine Cogeneration Systems in Saudi Arabia: completed.*
- *Esmail M. A. Mokheimer (PI), Mohamed A. Habib, Amro A. Al-Qutub, Syed A. M. Said and Shakeel A., "Hybrid Concentrated Solar-Fossil Fuel Electric Power Generation and its Application in Saudi Arabia, Research Project No. R12- CE-10, KFUPM-MIT Research Collaboration Center of Clean Water and Clean Energy, completed.*
- *Esmail M. A. Mokheimer (PI), Study for Center of Excellence Research in Renewable Energy, Project # CoRE-RE-08 (CER02321) entitled: Assessment of hybrid solar power application in the Kingdom of Saudi Arabia; Completed.*
- *Esmail M. A. Mokheimer (PI), Study of RI-KFUPM Project (CER02321) entitled: Energy Efficient Technologies for Residential Air Conditioning and Refrigeration Technologies: Prepared for Ministry of Water and Electricity (Project # 6008 م ك through NEEP; Completed.*

Research Summary

- Number of Published Papers:168
- Citations : 2763
- H-Index : 27
- Number of Patents : 23
- Book Chapters:
- Article Reviewed (Elsevier, Springer, ASME,..): 650

Award and Recognitions

- Associate Editor, ASME, Journal of Energy Resources Technology.
- Best researcher, KFUPM.
- Best Advisor, KFUP.
- K. A. CARE, research Fellow

Skills and Expertise

- Performance Evaluation of Hybrid Renewable system, HVAC, Sustainable Building, Energy Auditing and management, Thermodynamics, heat and mass transfer analysis, ...
- Designing, Computing, Simulation & Modelling by ANSYS, Thermoflow, Retscreen , SAM and TRNSYS;
- Developing and optimization of simulation codes
- Design and optimization of clean, fuel flexible and stable combustion systems.
- Thermal comfort, Energy Management, Life cycle cost analysis and Energy Efficiency;
- Develop innovative designs for optimal integration of renewable/conventional energy sources.