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Dr. Ahmed Samir

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

Mechanical engineer with more than 11 years of academic teaching experience, in addition to a wide research experience in renewable energy systems through M.Sc. and Ph.D. studies, using different experimental and numerical approaches. Conducted several studies on utilizing the nanomaterials, with fluids and phase change materials, to enhance the performance of the hybrid solar systems. Has a strong background in:

- ✓ Experimental measurements and control
- ✓ Different numerical simulation tools
- ✓ Teaching close to 16 different undergraduate academic courses and labs.

Education

- ☐ Ph.D. in Mechanical Engineering (KFUPM, 2020)
- ☐ M.Sc. in Mechanical Engineering (ASU, 2015)
- ☐ BSc in Mechanical Engineering (ASU, 2008)

Distinguished Projects

- **Contributed as a member in different research projects in Saudi Arabia and Malaysia as follows:**
 - "Experimental and Modelling development of an optical filter based two-channel hybrid PV/T solar collector using nanofluids", DSR project, Center of Research Excellence in Renewable Energy (CoRE-RE), KFUPM, **Saudi Arabia** (April 2017 - October 2020).
- PI: Prof. Fahad Al-Sulaiman, CoRE-RE (Now is IRC-REPS), KFUPM, Saudi Arabia**
- "Experimental and numerical study for the thermal and rheological properties of nano phase change materials (nanoPCM) used with solar collectors", Research Center for Nano-Materials and Energy Technology (RCNMET), Sunway University, **Malaysia** (January 2018 - January 2019).

PI: Prof. Saidur Rahman, RCNMET, Sunway University, Malaysia

- **Contributed in different energy efficiency audition projects:**
 - Energy auditing of the mechanical department building (#63), KFUPM (coordinator)
 - Energy auditing of Saudi Steel Pipe Company (SSPC) (member)
 - Energy auditing of Arabian Fiberglass Insulation Company (AFICO) (member)

Research Summary

- 14 Published Papers
- 283 Citations
- H-Index: 8

Award and Recognitions

Skills and Expertise

- Experimental measurements of different thermophysical properties of nano-enhanced fluids and phase change materials.
- Experimental measurements data collection and control using LabVIEW connected to various-purposes Data Acquisition Cards (DACs).
- Numerical simulation of different renewable energy systems in solar and geothermal topics. (e.g. hybrid and concentrated hybrid PVT solar systems and borehole heat exchangers).
- Teaching of several mechanical engineering courses in different topics; fluid mechanics, thermodynamics, heat transfer, renewable energy, power plants, turbomachinery, air conditioning, refrigeration, combustion, internal combustion engines, and automatic control.
- Writing of journal papers, conference papers, and scientific proposals.