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## Dr. Syed M. Zubair

**Distinguished Professor, Mechanical Engineering Department**

**Interdisciplinary Research Center for Renewable Energy and Power Systems (IRC-REPS)  
 King Fahd University of Petroleum & Minerals, Saudi Arabia**

### Executive Summary:

Prof. Zubair's research interest involves both applied as well as fundamental areas of energy and desalination systems: thermal and membrane-based desalination systems, refrigeration and air-conditioning systems, and fouling of heat exchangers. He has participated in several research projects, including projects supported by MIT-KFUPM Center for Clean Water and Clean Energy. The heating and dehumidification (HDH) technology that he developed with MIT collaborators ended up in commercial application for treating produced water from oil and gas wells. He has published over 300 research papers and was awarded 11 US patents. Currently, he is serving on the editorial boards of International Journal of Refrigeration and as Associate Editor of Nature Partner Journal (npj) Clean Water.

### Education:

- ❑ Ph.D., Mechanical Engineering, Georgia Institute of Technology, Atlanta, Georgia, USA (1985)
- ❑ M.S., Mechanical Engineering, King Fahd University of Petroleum & Minerals (KFUPM), Dhahran, Saudi Arabia (1980)
- ❑ B.S., Mechanical Engineering, University of Engineering & Technology, Lahore, Pakistan (1978)

## Distinguished Projects

- *Energy Conservation On the Campus of King Fahd University of Petroleum and Minerals (KFUPM), Dhahran, Saudi Arabia*, funded by KFUPM.
- *Electrical and Physical Properties of Soils in Saudi Arabia*, funded by KACST,.
- *A Maintenance Strategy for Heat Transfer Equipment Subject to Fouling*, funded by DSR, KFUPM.
- *A Maintenance Strategy for Plate-and-Frame Heat Exchangers at Hadeed Plant*, funded by SABIC/DSR, KFUPM.
- *The Impact of Risk-Based Fouling on The Performance of Cooling Towers, Evaporative Condensers, and Evaporative Fluid Coolers*, funded by DSR, KFUPM.
- *The Effect of Superheating and Subcooling on the Total Heat Exchanger Area for a Feedwater Heater in a Power Plant*, funded by SABIC/DSR, KFUPM
- *Study of Efficient Air Conditioning and Refrigeration Technologies*, Ministry of Water and Electricity, Riyadh, Saudi Arabia.
- *Analysis and Assessment of a MSF Evaporation Desalination Plant*, funded by SABIC/DSR, KFUPM
- *Study of Air Conditioning Compressor Operating Problems*, funded by Saudi Telecom Company, Riyadh.
- *Study on Energy Conservation in STC LA-SILKI Building*, Dammam, funded by Saudi Telecom Company, Riyadh.
- *Characterization of Thermal and Structural Performance of Thermal Interface Materials*, funded by DSR, KFUPM.
- *Performance Enhancement of Fins Used in Electronic Packaging*, funded by DSR, KFUPM.
- *Multi-Stage Water Desalination Using Solar Energy*, funded by NSTIP/KACST, Riyadh
- *Performance Improvements of Refrigeration / Air-Conditioning Systems Using Mechanical Subcooling*, funded by NSTIP/KACST, Riyadh
- *Seawater Desalination Using Thermal, Solar, and Hybrid Systems, Including Humidification Desalination*, funded by MIT-KFUPM Center.
- *Optimal and Sustainable Design of Hybrid Co-generation Desalination Plants*, funded by MIT-KFUPM Center.

## Research Summary

- Number of Published Papers: 300
- Citations : 11,720
- H-Index : 54
- Number of Patents : 11
- Book ; 1

## Award and Recognitions

- Received Distinguished Professor title, KFUPM, 2009.
- Received Distinguished Teacher Award in the College of Engineering Sciences, KFUPM, 1992, and 2003.
- Received Distinguished Researcher Award from KFUPM, 1993, 1998, 2006.
- Received best Applied Research Project on Electrical and Physical Properties of Soils in Saudi Arabia, from GCC-CIGRE group - 1993.

## Skills and Expertise

- Renewable and HVAC Systems, Photovoltaic Integration With Conventional Systems;
- Thermal and Membrane Based Desalination Systems;
- Design and Rating of Thermal Systems;
- Heat Exchangers Fouling Mitigation;
- Energy Conversion and Management;
- Solar Powered Desalination and Air-Conditioning Systems.