

## DR. ABDUL-RAHIM A. KHALED

Professor, Mechanical Engineering Dept., King Abdulaziz University

### Education

Degree	Field	Institution	Year
PhD	Mechanical Engineering	The Ohio State University, USA	2004
MS	Mechanical Engineering	Kuwait University, Kuwait	1999
BS	Mechanical Engineering	Kuwait University, Kuwait	1995

### Academic Experience

From	To	Institution	Rank	Title (Chair, Coordinator, etc.)	Full or Part Time
2004	2008	King Abdulaziz Univ.	Assist Prof.		Full Time
2008	2012	King Abdulaziz Univ.	Assoc. Prof.		Full Time
2012	Date	King Abdulaziz Univ.	Professor		Full Time

### Non Academic Industrial Experience (including Consultations)

From	To	Company/Entity	Title	Position Description (Brief)	Full or Part Time
1996	2000	Kuwait University	Scientific Assistant	Research and development	Full Time
2000	2004	The Ohio State University, USA	Research Associate	Research and development	Full Time
2004	2004	University of California at Riverside, USR	Post Doc.	Research and development	Full Time

### Funded Research Projects and Patents from the Past Five Years

#### First: Funded Research Projects

1. Grant No. M.W.E-E4003, Ministry of water and electricity - K.S.A., Research project, *Effects of ambient temperature and shading of the condensers of the air-conditioning units on their performance*, 2010, (Role: Co-Investigator).
2. Grant No. 8-ENE192-3, King AbdulAziz City of Science and Technology KACST – K.S.A., Strategic research project, *Modelling and simulation of thermal systems having large heat transfer capability*, 2012, (Role: Principle Investigator).

#### Second: Patents

1. Vafai K and **Khaled ARA**, *Thin Film Based Microfluidic Devices* (Patent No. **8,172,156**). Date published May 8, 2012, United States Patent Office, USA.
2. Vafai K and **Khaled ARA**, "COOLING ENHANCEMENTS IN THIN FILMS USING FLEXIBLE COMPLEX SEAL DUE TO TEMPERATURE INCREASE OR THERMAL LOAD INCREASE" (Patent No. 8,684,274). Date published April 1, 2014, United States Patent Office, USA.
3. Vafai K and **Khaled ARA**, "SMART PASSIVE THERMAL DEVICES AND METHODS" (Patent No. 8,684,275). Date published April 1, 2014, United States Patent Office, USA.
4. Vafai K and **Khaled ARA**, "CONTROL OF FLOW RATE AND THERMAL

CONDITIONS USING TWO-LAYERED THIN FILMS SEPARATED BY FLEXIBLE SEALS AND ROTATABLE PIVOT" (Patent No. 8,690,073). Date published April 8, 2014, United States Patent Office, USA.

### **Current Membership in Professional Societies and Organizations**

<i>Society/organization</i>	<i>Rank</i>	<i>Member Since</i>
1. Journal of Electronic Cooling and Thermal Control JECTC	Associate Editor	2010
2. International Journal of Heat and Mass Transfer	Reviewer	2003
3. Journal of Applied Mechanics - Transactions of The ASME	Registered Reviewer	2006
4. Journal of Porous Media	Reviewer	2003
5. International Journal of Exergy	Reviewer	2003

### **Honours and Awards**

1. 2008, 2009, 2010, 2011 and 2012 King Abdulaziz Rector's Distinguished Awards (Scientific publishing, Registering patents, Scientific publishing from master thesis, Group C-citations).

### **Institutional and Professional Services** (*administration, committees, units, etc.*)

1. Secretary of the Thermal Engineering and Desalination Technology Department Council, KAU, (2005-2011).
2. Mechanical Engineering (Thermal Engineering and Desalination Technology) Program Champion for ABET accreditation, KAU, (2011-Present).

### **Principal Publications/Presentations from the Past Five Years**

1. **A.-R.A. Khaled**, Heat Transfer Enhancement due to Properly Managing the Distribution of the Heat Flux: Exact Solutions, *Energy Conversion and Management* 53, 247-258, 2012.
2. **A.-R.A. Khaled** and I. Alqadai, Theoretical investigation on thermal insulation performance of closed cavity containing a hollow cylinder, *Energy and Buildings*, 54, 131-140, 2012.
3. **A.-R.A. Khaled** and K. Vafai, Analysis of Detection Enhancement Using Microcantilevers with Long-Slit-Based Sensors, *Sensors*, 13, 681-702, 2013.
4. **A.-R.A. Khaled** and A. A. Gari, Analysis of heat transfer inside wall-joint-fins systems, *Journal of Mechanical Science and Technology*, 27, 2523-2535, 2013.
5. **A.-R.A. Khaled** and K. Vafai, Heat transfer enhancement by layering of two immiscible co-flows, *International Journal of Heat and Mass Transfer*, 68, 299-309, 2014.
6. **A.-R.A. Khaled**, Analysis of Heat Transfers inside Counterflow Plate Heat Exchanger Augmented by an Auxiliary Fluid Flow, *The Scientific World Journal*, vol. 2014, Article ID 308545, 13 pages, 2014.

### **Recent Professional Development Activities** (*Workshops, training, etc.*)

1. Active Learning Workshop, Faculty of Engineering KAU, Jeddah, Saudi Arabia, Jan. 2010
2. Project Management, Eng. M. Al Momen, Deanship of Research KAU, 2011.
3. ABET IDEAL Scholar Workshop by Gloria Rogers, September 2013.