



د. رائد إبراهيم بورسلي  
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Assistant Professor



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### Research Interests

- Computational fluid dynamics, divergence combating techniques, meshless methods.
- HVAC, indoor-air quality, thermal comfort, energy management, renewable energy, sustainability.
- Non-Newtonian fluid models.
- Soft computing, evolutionary algorithms (EA,) fuzzy logic controllers (FLC,) optimization.
- Lattice Boltzmann Methods and Cellular Automata.

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### Education

<b>Doctor of Philosophy</b> <i>Rensselaer Polytechnic Institute, Troy, New York, USA</i>	<i>May 2005</i>
<b>Master of Science</b> <i>University of Washington, Seattle, Washington, USA</i>	<i>Dec. 1999</i>
<b>Bachelor of Science</b> (minor in Mathematics) <i>Seattle University, Seattle, Washington, USA</i>	<i>Jun. 1997</i>

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### Work Experience

<b>Assistant Professor</b>	<i>Department of Mechanical Engineering, Kuwait University, Kuwait</i>	<i>Jul. 2005 - present</i>
<b>Research Assistant</b>	<i>Mechanical, Aerospace and Nuclear Engineering Department Rensselaer Polytechnic Institute, Troy, NY</i>	<i>Jan. 2003 - Jun. 2003</i>
<b>Lab Engineer/ Teacher Assistant</b>	<i>Department of Mechanical Engineering, Kuwait University</i>	<i>Sep. 1997 - Feb. 1998</i>

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## Other Experiences

<b>Information Sciences Journal</b> Reviewer	<i>Mar. 2007 - Present</i>
<b>Seventh International Conference on Advances in Fluid Mechanics</b> Reviewer, session chairman <i>New Forest, UK, May 2008</i>	<i>Jan. 2007 - Present</i>
<b>International Journal of Numerical Methods for Heat and Fluid Flow</b> Reviewer	<i>Nov. 2006 - Present</i>
<b>International Journal of Applied Mathematics and Engineering Sciences</b> Editorial Board member/Reviewer.	<i>May. 2006 - Present</i>
<b>Sixth International Conference on Advances in Fluid Mechanics</b> Reviewer, Chairman of Wave Studies, Turbulence and Non-Newtonian Fluids sessions <i>Skiathos, Greece, May 2006</i>	<i>Sep. 2005 - May. 2006</i>
<b>International Scientific Advisory Committee – AFM Conference Series</b> Member <i>Wessex Institute of Technology, Ashurst, UK</i>	<i>June. 2004 - Present</i>
<b>Professional Leadership</b> <i>Archer Center</i> <i>Rensselaer Polytechnic Institute, Troy, NY, USA</i>	<i>Sep. 2004 - Dec. 2004</i>
<b>HVAC Fundamentals</b> <i>Engineering Professional Programs (EPP)</i> <i>The University of Washington, Seattle, Washington, USA</i>	<i>Oct. 1998 - Dec. 1999</i>
<b>Graphite Composite Electronics Box Research Project</b> <i>Seattle University and The Boeing Company, Space and Defense Group</i>	<i>Sep. 1996 - Jul. 1997</i>

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## Volunteer Work

<b>Arabic language and Islamic studies instructor</b> Islamic Presentation and Invitation Committee, Seattle, WA, USA	<i>Sep. 1998 - Sep. 2001</i>
<b>English/Math tutor for 4th/5th grade students</b> Coleman Elementary school, Seattle, WA, USA	<i>Sep. 1993 - Jun. 1994</i>
<b>Service under UN command in a post Gulf War peacekeeping mission</b> Egypt/Kuwait	<i>Jan. 1991 - Jun. 1991</i>

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## Publications

- Raed I. Bourisli and Esam M. Alawadhi, "Optimization of thickness, location and type of phase-change material used in insulation via real-coded genetic algorithms," *Energy Conversion and Management*, submitted for publication.
- Esam M. Alawadhi and Raed I. Bourisli, "Toward an optimum design of phase-change material configurations for thermal load-shifting in buildings," *Energex 2007 Conference*, Singapore, November 2007.
- Raed I. Bourisli and Mohammad A. Al-Ajmi, "Optimum segmentation of passive constrained layer damping treatment," *Second International Symposium on Design, Modeling and experiments on adaptive structures and smart systems*, Bad Herrenalb, Germany, October 2007.
- Raed I. Bourisli and Esam M. Alawadhi, "A proposed undergraduate CFD course design with equal emphasis on academic and industry requirements," *Proceedings of The Second International Conference on Engineering Education & Training*, Kuwait, 2007.
- Mohammad Al-Ajmi and Raed I. Bourisli, "Optimum design of segmented passive-constrained layer damping treatment through genetic algorithms," *Journal for Mechanics of Advanced Materials and Structures*, in press.
- Mohammad Al-Ajmi and Raed I. Bourisli, "Practical Design of PCLD Treatments for Beams Through a Deterministically-Verified Evolutionary Optimization," *First International Symposium on Design, Modeling and experiments on adaptive structures and smart systems*, Bardonecchia, Italy, July 2006.
- Raed I. Bourisli and Deborah A. Kaminski, "Solution of the incompressible Navier-Stokes equations via real-valued evolutionary algorithms," *Sixth International Conference on Advances in Fluid Mechanics*, Skiathos, Greece, in *Advances in Fluid Mechanics VI*, May, 2006.
- Raed I. Bourisli and Deborah A. Kaminski, "Evolutionary optimization techniques as versatile solvers for hard-to-converge problems in computational fluid dynamics," *International Journal for Numerical Methods in Fluids*, vol. 52, pp. 321-354
- Deborah A. Kaminski and Raed I. Bourisli, "The use of real-valued evolutionary algorithms as a tool to combat divergence in non-Newtonian fluids flow simulations," *Third M.I.T. Conference on Computational Fluid and Solid Mechanics*, Cambridge, MA, USA, MIT Press, MIT, K-J Bathe (editor), pp.128, June, 2005.
- Raed I. Bourisli and Deborah A. Kaminski, "Solving fluid flow problems using a real-coded genetic algorithm with uniform refinement," *Fifth International Conference on Advances in Fluid Mechanics*, Lisbon, Portugal, in *Advances in Fluid Mechanics V*, A. Mendes, M Rahman & C. A. Brebbia (editors), WIT Press, Wessex Institute of Technology, pp.63-72, March, 2004.

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## Memberships & Affiliations

- ASHRAE, 1998.
- ASME, 1996.
- Registered Engineer-in-Training (EIT), State of Washington, June 1997.

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## Extracurricular Interests

Basketball, football, scuba diving, piano, Neapolitan Italian opera arias, reading (astronomy, history, politics, religion, and fiction.)