

**Agendum
Oakland University
Board of Trustees Formal Session
September 23, 2009**

**APPOINTMENT OF DEAN OF THE
SCHOOL OF ENGINEERING AND COMPUTER SCIENCE
A Recommendation**

1. **Division and Department:** Academic Affairs/School of Engineering and Computer Science.

2. **Introduction:** We are pleased to recommend the appointment of Dr. Louay M. Chamra as Dean of the School of Engineering and Computer Science and Professor of Engineering, with tenure. This recommendation is based on an extensive review of Dr. Chamra's professional record and accomplishments, and support from the faculty and staff of the School of Engineering and Computer Science (SECS). (See Attachment A, Dr. Chamra's curriculum vita.)

Dr. Chamra received his B.S. in Mechanical Engineering from the University of Texas, Austin, his M.S. in Mechanical Engineering from the University of Portland, and his Ph.D. in Mechanical Engineering from The Pennsylvania State University. Since receiving his doctorate, Dr. Chamra's academic and administrative experience has been attained at Mississippi State University.

During his tenure at Mississippi State University, Dr. Chamra led his department successfully in strengthening its research areas and increasing research expenditures, increasing the number of graduate students, promoting a diverse faculty, encouraging faculty opportunities in the professional community, and fostering student-focused activities to showcase the work of both undergraduate and graduate students.

In research areas such as enhanced heat transfer and energy utilization and efficiency, Dr. Chamra has been primary or co-investigator of projects totaling over 10 million dollars. In addition, he has served as a co-director of the Southeast Combined Cooling, Heating and Power (CHP) Regional Application Center, established in 2004 for the U.S. Department of Energy. Dr. Chamra's scholarly output includes more than sixty journal articles and conference papers, a textbook, and five textbook chapters.

An Employment Agreement between Dr. Louay M. Chamra and Oakland University (University) has been signed by the parties, but is contingent upon approval of the Board of Trustees (Board). The Employment Agreement was reviewed and approved by the Office of the Vice President for Legal Affairs and General Counsel prior to execution, and is in compliance with the law and University policies and regulations and conforms to the legal standards and policies of the Vice President for Legal Affairs and General Counsel.

**Appointment of Dean of the
School of Engineering and Computer Science
Oakland University
Board of Trustees Formal Session
September 23, 2009
Page 2**

3. **Previous Board Action:** The Board periodically appoints deans at formal sessions of the Board.
4. **Budget Implications:** Funding for the position of Dean of SECS is included in the General Fund Budget approved annually by the Board.
5. **Educational Implications:** Appointing Dr. Chamra as Dean of SECS will provide academic leadership in the areas of teaching, scholarship and service; will assure leadership in maintaining SECS and program accreditation standards; and will provide leadership in the wider community to foster ties between the University and industry.
6. **Personnel Implications:** The personnel implications are as outlined in the recommendation below.
7. **University Reviews/Approvals:** An extensive review of Dr. Chamra's professional record and accomplishments was conducted by the Senior Vice President for Academic Affairs and Provost and the President.
8. **Recommendation:**

RESOLVED, that the Board appoints Dr. Louay M. Chamra to the position of Dean of the School of Engineering and Computer Science and Professor of Engineering with tenure, effective October 5, 2009, in accordance with the terms and conditions of the Employment Agreement between Dr. Louay M. Chamra and Oakland University.

Appointment of Dean of the
School of Engineering and Computer Science
Oakland University
Board of Trustees Formal Session
September 23, 2009
Page 3

9. Attachments:

A. Dr. Chamra's curriculum vita.

Submitted to the President

on 9/12, 2009 by



Virinder K. Moudgil
Senior Vice President for Academic
Affairs and Provost

Recommended on 9/14, 2009
to the Board for approval by



Gary D. Russi
President

Louay M. Chamra

PACCAR Chair and Head of Mechanical Engineering Mississippi State University

P. O. Box ME
210 Carpenter Engineering Building
Mississippi State, MS 39762
E-mail: chamra@me.msstate.edu
Office: (662) 325 0618
Fax: (662) 325 7223

EDUCATION

Ph.D., Mechanical Engineering, The Pennsylvania State University, August 1992.

M.S., Mechanical Engineering, University of Portland, December 1988.

B.S., Mechanical Engineering, The University of Texas at Austin, December 1986.

PROFESSIONAL EXPERIENCE

PACCAR Chair and Department Head, Mechanical Engineering, Mississippi State University,
February 2009 - present

Interim Department Head, Mechanical Engineering, Mississippi State University,
2007- 2009.

Professor, Mechanical Engineering, Mississippi State University, 2006 – present.

Associate Professor, Mechanical Engineering, Mississippi State University, 2001 – 2006.

Assistant Professor, Mechanical Engineering, Mississippi State University, 1996 - 2001.

Research Associate, Mechanical Engineering, the Pennsylvania State University, 1992 - 1996.

ADMINISTRATIVE EXPERIENCE

PACCAR Chair and Department Head, Mechanical Engineering, Mississippi State University,
February 2009 - present

**Interim Department Head, Mechanical Engineering, Mississippi State University,
2007- 2009.**

- Lead an academic unit consisting of 22 faculty, two research faculty, 6 support staff, 480 undergraduate students, and 60 graduate students.
- Recruited and hired five faculty members and four support staff members. Mentored individual faculty members to enhance their research, teaching, and service activities. Successfully supported three tenure and promotion applications and one promotion application (two promotion to Associate Professor and two promotions to full Professor).
- Have led the department to strengthen its research areas and increased research expenditures from \$2.3MM in CY 06 to \$11.9MM in CY 08. Additionally, the number of submitted proposals has increased from 12 in CY 07 to 30 in CY 08.
- Have led the department to strengthen its scholarly productivity and increased refereed journal publications from 30 in CY 07 to 49 in CY 08.
- Promoted effort to create a diverse faculty. The faculty includes six minority members (three African-Americans and three Hispanics); this represents twenty-five percent (27%) of the total ME faculty. The remaining faculty members represent many nationalities and two are women (10%).
- Doubled the number of full-time doctoral students from 18 to 36 students. In addition, the number of PhD students graduating from the ME program has doubled from 2 per year to 4 graduates per year.
- Successfully added three tenure track faculty positions, thus increasing the ME faculty from 19 tenure track faculty in CY 06 to 22 tenure track faculty in CY 08.
- Supported and encouraged faculty participation in the professional community. The faculty of the Department of Mechanical Engineering is active in research groups and professional organizations. Due to their participation in these organizations, the awareness of the department, BCOE and MSU are prominent. In 2007, the department held a reception to recognize existing and recently elected ASME Fellows. The ME undergraduate program coordinator was recognized for sixteen years of outstanding advising when she was awarded the 2008 Irvin Atly Jefcoat Excellence in Advising Award by MSU. Furthermore, the undergraduate program coordinator was awarded the 2008 NACADA Region IV and National Outstanding Faculty Advisor Award. A Professor in Mechanical Engineering received the 2008 Ralph E. Powe Research Excellence Award, which annually recognizes faculty researchers making important contributions to the economic welfare or cultural growth of the university, state and nation.
- Support professional development of staff through pursuit of educational opportunities at MSU.

- Held regularly scheduled faculty meetings. The Department of Mechanical Engineering holds three to four faculty meetings each academic semester. The dates for these meetings are given to the faculty at the beginning of each semester. In addition to regularly scheduled faculty meetings, the department holds an annual faculty planning conference at the end of the Spring semester. The 2007 Planning Conference focused on the graduate program, including distance learning, curriculum, recruiting, and tuition/stipends. The 2008 Planning Conference focused on updating the department strategic plan.
- Organized the First Energy-Synergy workshop at Mississippi State University. The major objective of the Energy-Synergy workshop was to stimulate interdisciplinary collaborations towards identifying strategies for sustainable energy solutions. As a result, more than 100 researchers participated and presented 72 posters. The posters were aimed at introducing and exchanging energy-related research to the MSU engineering and scientific community.
- Initiated student-focused activities for both undergraduate and graduate students to showcase the accomplishments of ME students, faculty and staff. Also guest speakers are invited to the department to share their professional experiences and knowledge with faculty and students. In addition, the department (each semester) sponsors a graduate recruiting luncheon for undergraduate students interested in graduate opportunities within the department. Also, companies who are interested in recruiting our students are encouraged to sponsor chapter meetings (AFS, ASME) to provide information concerning employment with their organizations.
- Hired a graphic designer and webmaster to raise awareness of the department within the academic community. The webmaster responsibilities include maintaining three critical websites; the MSU Department of Mechanical Engineering, the CHP Southeast Regional Application Center and the MSU Micro-CHP center. In this role, the webmaster is responsible for maintaining the sites functionality, updating their content, and redesigning layout and graphic aspects to enhance their appearance, communication efficiency and ease of navigation.
- Updated the Department of Mechanical Engineering website to become more multimedia oriented by using a proper balance of colors, fonts, pictures, tables, flash animations and functional buttons, but keeping the site fast and simple to navigate. The website includes departmental news, position announcements, thesis/dissertation defense schedules, conferences, and faculty/staff personal web pages including the creation of several flash animations in support of the CHP research program.
- Initiated a public relation campaign by establishing the department newsletters (Fall 2007 and Spring 2008). In addition, the graphic designer was charged of printed media for the department. The staff member designed the Materials Working Group brochure and the Automotive Certificate Program brochure, as well as several printed materials requested by

faculty members, i.e., posters and handouts for conferences, workshops or presentations, and redrawing of technical illustrations for publications.

- Coordinated the development of four academic program brochures to provide information concerning the Undergraduate and Graduate programs, Material Science and Engineering Certificate and the Automotive Engineering Certificate. Additionally, three research program brochures were developed to provide information concerning the Micro-CHP project, Industrial Assessment Center, and the CHP Southeast Regional Application Center.

Co-Director, Southeast Combined Cooling, Heating and Power (CHP) Regional Application Center, 2004- present.

The Southeast CHP Application Center (CHPCenterSE) was established in August 2004 for the U.S. Department of Energy (DOE). The Center promotes the development and deployment of integrated systems that provide on-site electrical generation and utilize the heat from the generation equipment to provide cooling and/or heating for the building. The center is co-located at the Micro-CHP and Bio-Fuels Center at Mississippi State University and the NC+CHP Application Program at North Carolina State University. As a co-director, my duties require collaboration with all state energy offices in the Southeast in order to organize workshops related to CHP. In addition, I coordinate successful assessment studies and the implementation of CHP feasibility studies.

Director, Micro Cooling, Heating, and Power (Micro-CHP) and Bio-Fuel Center, 2004- present.

The Micro-CHP and Bio-Fuel Center is a joint effort among Mechanical Engineering, Chemical Engineering, and Mississippi Agricultural and Forestry Experiment Station (MAFES). The Center adds new capabilities for the development and optimal use of CHP packages for energy conservation, efficiency, and reliability. As a director of the Micro-CHP and Bio-Fuel Center, I coordinate and manage the activities of a multidisciplinary team of more than 15 faculty and 40 graduate students.

U.S. PATENT

Randlett, M.R., Webb, R.L., and Chamra, L.M., "Heat Exchange Tube with Embossed Enhancement," U. S. Patents number 6,067,712, May 2000.

BOOK

Chamra, L.M. and Mago, P.J., "Micro-CHP Power Generation for Residential and Small Commercial Buildings." Nova Science Publishers, Inc., New York, 2008. ISBN: 1-60456-867-7

BOOK CHAPTERS

1. Mago, P.J., **Chamra, L.M.**, and Fumo, N., "Evaluation of Cooling, Heating, and Power Systems Based on Primary Energy Operational Strategy." In Progress in Management Engineering, Frank Columbus (Editor), Nova Science Publishers, Inc., New York, 2009, (Invited).
2. **Chamra, L.M.** and Mago, P.J., "Micro-CHP Power Generation for Residential and Small Commercial Buildings." In Electric Power Research Trends, Michael C. Schmidt (Editor), Nova Science Publishers, Inc., 2008, at Press, ISBN: 1-60021-978-0 (Invited).
3. Mago, P.J. and **Chamra, L.M.**, "Use of Organic Rankine Cycles to Produce Electric Power from Waste Heat Sources." In Electric Power Research Trends, Michael C. Schmidt (Editor), Nova Science Publishers, Inc., 2008, at Press, ISBN: 1-60021-978-0 (Invited).
4. **L.M. Chamra** and B.K. Hodge, "Cooling, Heating, and Power (CHP) Technology/Systems," Encyclopedia of Chemical Processing, Taylor and Francis, 2005. (Invited)
5. **L.M. Chamra** and B.K. Hodge, "Dehumidification," Encyclopedia of Chemical Processing, Taylor and Francis, 2005. (Invited)

REFEREED JOURNAL ARTICLES

1. Mago, P.J., **Chamra, L.M.**, and Ramsay, J. "CHP System Hybrid Electric-Thermal Load Following Operation." IMechE Journal of Power and Energy, Under Review
2. Mago, P.J., and **Chamra, L.M.** "Analysis and Optimization of CCHP Systems based on Energy, Economical, and Environmental considerations." Energy and Buildings, Under Review.
3. Weathers, J.B., Luck, R., **Chamra, L.M.**, "On the State of Quantitative Validation Metrics," Reliability Engineering and System Safety, under review.
4. Cho, H., Mago, P., Luck, R., and R., **Chamra, L.M.**, Evaluation of CHP Performance based on Energy Cost, Primary Energy Consumption, and Carbon Dioxide Emission using an Optimal Operation Scheme, Applied Energy, under review.
5. Weathers, J.B., Luck, R., **Chamra, L.M.**, "On the State of Quantitative Validation Metrics," Reliability Engineering and System Safety, under review

6. Hueffed, A., **Chamra, L.M.**, and Mago, P.J., "A Simplified Model of Heat and Mass Transfer Between air and Falling-Film Desiccant in Parallel-Plate Humidifier," ASME Journal of Heat Transfer, Vol.131, Iss.5, in-Press, doi:10.1115/1.3082420.
7. Fumo, N., Mago, P. and **Chamra, L.M.**, "Emission Operational Strategy for Combined Cooling, Heating, and Power Systems", Journal of Applied Energy. Accepted for publication, reference: APEN1639 (2009).
8. Cho, H., Luck, R., S.D. Eksiouglu, **Chamra, L.M.**, "Cost-optimized real -time operation of CHP systems," Energy and Buildings (2008), in-Press, doi:1011016,j.enbuild.2008.
9. Mago, P.J., Fumo, N., and **Chamra, L.M.**, "Performance Analysis of CCHP and HP Systems Operating Following the Thermal and Electric Load." International Journal of Energy Research, DOI:10.1002/er.1526.
10. Fumo, N., Mago, P.J., and **Chamra, L.M.**, "Energy and Economic Evaluation of Cooling, Heating, and Power Systems Based on Primary Energy." Applied Thermal Engineering, doi:10.1016/j.applthermaleng.2008.12.027.
11. Mago, P.J., and **Chamra, L.M.**, "Exergy Analysis of a Combined Engine-Organic Rankine Cycle Configuration." IMechE Journal of Power and Energy, 2008, Vol.22, No. 8, pp. 761-770.
12. Fumo, N., Mago, P.J., and **Chamra, L.M.**, "Analysis of Cooling, Heating, and Power Systems based on Site Energy Consumption." Applied Energy, 2009, Vol. 86, 99. 928-932.
13. Fumo, N., Mago, P.J., and **Chamra, L.M.**, "CHP Energy Performance for System Feasibility." IMechE Journal of Power and Energy, Vol. 222, No. 5, 2008, pp. 347-354.
14. Srinivasan, K.K., Mago, P.J., Zdaniuk, G.J., **Chamra, L.M.**, and Midkiff, K.C., "Improving the Efficiency of the Advanced Injection Low Pilot Ignited Natural Gas Engine Using Organic Rankine Cycles," ASME Journal of Energy Resources Technology, Vol. 130, pp. 022201-1 - 022201-7, June 2008.
15. Zdaniuk, G.J., Luck, R., and **Chamra, L.M.**, "Linear Correlation of Heat Transfer and Friction in Helically-finned Tubes Using Five Simple Groups of Parameters," International Journal of Heat and Mass Transfer, 50, pp. 3548-3555, March 2008.
16. Mago, P.J., Srinivasan, K., **Chamra, L.M.**, and Somayaji, C., "An Examination of Exergy Destruction in Organic Rankine Cycles," International Journal of Energy Research, Vol. 32, No. 10, August 2008, pp. 926-938.
17. Zdaniuk, G., **Chamra, L.M.**, and Mago, P.J., "Experimental Determination of Heat Transfer

- and Friction in Helically-Finned Tubes.” *Experimental Thermal and Fluid Science*, Vol. 32, No. 3, January 2008, pp. 761-775.
18. Moran, A., Mago, P.J., and **Chamra, L.M.**, “Thermoeconomic Modeling of Micro-CHP (Micro-Cooling, Heating, and Power) for Small Commercial Applications.” *International Journal of Energy Research*, Vol. 32, No. 9, July 2008, pp. 808-823.
 19. Mago, P.J., **Chamra, L.M.**, Srinivasan, K., and Somayaji, C., “An Examination of Regenerative Rankine Cycles Using Dry Fluids.” *Applied Thermal Engineering*, Vol. 28, No. 8-9, June 2008, pp. 998-1007.
 20. Zdaniuk, G., **Chamra, L.M.**, and Mago, P.J., “Experimental Determination of Heat Transfer and Friction in Helically-Finned Tubes.” *Experimental Thermal and Fluid Science*, Vol. 32, No.3, pp. 761-775, January 2008.
 21. Mago, P.J., Fumo, N., and **Chamra, L.M.**, Methodology to Perform a Non-conventional Evaluation of Cooling, Heating, and Power (CHP) Systems. *IMEchE Journal of Power and Energy*, Vol. 221, No. 8, pp. 1075-1087, December 2007.
 22. Zdaniuk, G.J., **Chamra, L.M.**, and Walters, D.K., “Correlating Heat Transfer and Friction in Helically-finned Tubes Using Artificial Neural Networks,” *International Journal of Heat and Mass Transfer*, 50, pp. 4713-4723, June 2007.
 23. **Chamra, L.M.**, and Mago, P.J., “Modeling of evaporation heat transfer of pure refrigerants and refrigerant mixtures in micro-fin tubes.” *Journal of Mechanical Engineering Science*, Vol. 221 (4), pp. 443-447, 2007.
 24. Mago, P.J., **Chamra, L.M.**, and Somayaji, C., “Performance analysis of different working fluids for use in organic Rankine cycles.” *Journal of Power and Energy*, Volume 221, Number 3 / 2007, pp. 255-263, 2007.
 25. **Chamra, L.M.**, Mago, P.J., and Zdaniuk, G., “Experimental Comparison of Condensers and Evaporators for use in both Bottom-Mount and Side-by-Side Refrigerator/Freezer Units.” *IMEchE Journal of Mechanical Engineering Science*, Vol. 220, No. 2, pp. 215-222, February 2006.
 26. Mago, P.J., **Chamra, L.M.**, and Steele, G., “A Simulation Model for the Performance of a Hybrid Liquid Desiccant System during Cooling and Dehumidification.” *International Journal of Energy Research*, Vol. 30, January 2006, pp. 51-66.
 27. Zdaniuk, G., **Chamra, L.M.**, and Mago, P.J., “A Literature Survey of Water-Side Fouling Applicable to Cooling Tower Condensers.” *IMEchE Journal of Power and Energy*, Vol. 220,

November 2006, pp. 815-827.

28. **Chamra, L.M.** and Mago, P.J., "Modeling of Condensation Heat Transfer of Refrigerant Mixtures in Micro-Fin Tubes." *International Journal of Heat and Mass Transfer*, Vol. 49, No.11-12, pp. 1915-1921, 2006.
29. **Chamra, L.M.**, Mago, P.J., Tan, M., and Kung, C., "Modeling of Evaporation and Condensation Pressure-drop in Micro-fin Tubes." *IMEchE Journal of Mechanical Engineering Science*, Vol. 219, Part C, No. 1, January 2005, pp. 61-71.
30. **Chamra, L.M.**, Mago, P.J., Tan, M., and Kung, C., "Modeling of Condensation Heat Transfer of Pure Refrigerants in Micro-Fin Tubes." *International Journal of Heat and Mass Transfer*, Vol. 48, No. 7, March 2005, pp. 1293-1302.
31. **Chamra, L.M.**, Tan, M.O., and Kung, C.C., "Evaluation of Existing Condensation Heat Transfer Models in Horizontal Micro-Fin Tubes," *Journal of Experimental Thermal and Fluid Science*, 28, pp. 617-628, 2004.
32. **Chamra, L.M.**, Steele, G. W., and Huynh, K., "The Uncertainty Associated with Thermal Comfort," *ASHRAE Transactions*, Vol. 109, Part 2, 2003.
33. **Chamra, L.M.**, Tan, M.O., Kung, C.C., and Tang, S.S., "Evaluation of Existing Evaporation Heat Transfer Models in Horizontal Micro-Fin Tubes," *ASHRAE Transactions*, Vol. 109, Part 1, 2003.
34. **Chamra, L.M.**, Huynh, K., and Hodge, B.K., "Thermal Comfort for Sedentary and Moderate Activity Levels," *ASHRAE Transactions*, Vol. 108, Pt. 1, 2002.
35. Al-Fahed, S., **Chamra, L.M.**, and Chakroun, W., "Pressure Drop and Heat Transfer Comparison for Both Microfin Tube and Twisted-Tape Inserts in Laminar Flow." *Journal of Experimental Thermal and Fluid Science*, 18 (4) pp. 323-333, 1999.
36. Broignaux, Laurent, Webb, R. L., **Chamra, L.M.**, and Chung, B.Y., "Single Phase Heat Transfer in Micro-fin Tubes." *Int. Journal of Heat and Mass Transfer*, Vol. 40, No.18, pp. 4345-4357, 1997.
37. **Chamra, L.M.**, Webb, R.L., and Randlett, M.R., "Advanced Micro-Fin Tubes for Evaporation." *Int. Journal of Heat and Mass Transfer*, Vol. 39, No. 9, pp. 1827 – 1838, 1996.
38. **Chamra, L.M.**, Webb, R.L., and Randlett, M.R., "Advanced Micro-Fin Tubes for Condensation." *Int. Journal of Heat and Mass Transfer*, Vol. 39, No. 9, pp. 1839 – 1846, 1996.

39. **Chamra, L.M.**, and Webb, R.L., "Condensation and Evaporation in Micro-Fin Tubes at Equal Saturation Temperatures." *Journal of Enhanced Heat Transfer*, Vol. 2, No. 3, pp. 219-229, 1995.
40. **Chamra, L.M.** and Webb, R.L., "Modeling Liquid-Side Particulate Fouling in Enhanced Tubes." *International Journal of Heat and Mass Transfer*, Vol. 37, No. 4, pp. 571-579, 1994.
41. **Chamra, L.M.** and Webb, R.L., "Effect of Particle Size and Size Distribution on Particulate Fouling in Enhanced Tubes," *Journal of Enhanced Heat Transfer*, Vol. 1, No. 1, pp. 65-75, 1993.

REFEREED CONFERENCE ARTICLES

1. Cho, H., Luck, R., Mago, P.J., and **Chamra, L.M.**, Assessment of CHP System Performance with Commercial Building Benchmark Models in Different U.S. Climate Zones. ASME Energy Sustainability 2009, San Francisco, California, USA, July 19-23, 2009.
2. Fumo, N., Mago, P.J., **Chamra, L.M.**, and Hodge, B.K., "Potential of Thermal Solar Energy for CHP Energy Performance in Hot Climates." ASES National Solar Conference, Solar 2009, Buffalo, NY, May 13-16, 2009, under review.
3. N. Fumo, **L.M. Chamra**, and V. Bortone, "Potential of Solar Thermal Energy for CCHP Systems", ASME Conference - Energy Sustainability 2009, San Francisco, California, July 19-23, 2007. Abstract accepted, full paper under review, reference: 90081.
4. Cho, H., Luck, R., Eksioglu, S.D., **Chamra, L. M.**, "Operation of a CCHP System using an Optimal Energy Dispatch Algorithm." ASME Proceedings of Energy Sustainability 2008, August 10-13, Jacksonville, FL.
5. Fumo, N., Mago, P.J., and **Chamra, L.M.**, "Effect of the Power Generation Unit Size on the Energy Performance of Cooling, Heating, and Power Systems." ASME Power Conference, Paper No. PWR2008-60057, Orlando, FL, July 22-24, 2008.
6. Graves, R.D., Hodge B.K. and **Chamra, L.M.**, "The Spark Spread as a Measure of Economic Viability for a Combined Heating and Power Application with Ideal Loading Conditions." ASME Energy Sustainability Conference, Paper No. ES2008-54203, Jacksonville, FL, August 10-14, 2008.
7. Weathers, J.B., Marvel, B.T., Srinivasan, K.K., Mago, P.J., **Chamra, L.M.**, and Steele, W.G., "Error Propagation in Heat Release Analysis of Pilot Ignited Natural Gas Combustion." ASME International Mechanical Engineering Congress and Exposition (IMECE2007), Paper

No.IMECE2007-42144, Seattle, Washington, November 11-15, 2007.

8. Cho, H., Luck, R., **Chamra, L.M.**, “Technical and Economical Analysis of a Micro-CHP Facility based on Dynamic Simulation: A Case Study” ASME International Mechanical Engineering Congress and Exposition (IMECE2007), Seattle, Washington, November 11-15, 2007.
9. Weathers, J. B., Marvel, B. T., Srinivasan, K. K., Mago, P. J., **Chamra, L.M.**, and Steele, W.G., “Error Propagation in Heat Release Analysis of Pilot Ignited Natural Gas Combustion” ASME International Mechanical Engineering Congress and Exposition (IMECE2007), Seattle, Washington, November 11-15, 2007.
10. Fumo, N., Mago, P.J., and **Chamra, L.M.**, “Evaluation of Cooling, Heating, and Power (CHP) Systems Based on Energy-Rating.” ASME Energy Sustainability 2007, Paper No.ES2007-36145, June 27-30, Long Beach, California, USA.
11. Srinivasan, K.K., Mago, P.J., Zdaniuk, G.J., **Chamra, L.M.**, Midkiff, K.C., “Improving the Efficiency of the Advanced Injection Low Pilot Ignited Natural Gas Engine using Organic Rankine Cycles.” ASME Energy Sustainability 2007, Paper No.ES2007-36151, June 27-30, Long Beach, California, USA.
12. Cho, H., Luck, R., **Chamra, L.M.**, “Dynamic Simulation of a Micro-CHP Facility: A Case Study.” ASME Proceedings of Energy Sustainability 2007, June 27-30, Long Beach, CA.
13. Mago, P.J., **Chamra, L.M.**, and Somayaji, C., “Optimization of Organic Rankine Cycles Using Dry Fluids.” ASME International Mechanical Engineering Congress and Exposition (IMECE2006), Paper No. IMECE2006-14805, November 5-10, Chicago, Illinois, USA.
14. Mago, P.J., **Chamra, L.M.**, and Moran, A., “Modeling of Micro-Cooling, Heating, and Power (Micro-CHP) for Residential or Small Commercial Applications.” ASME International Mechanical Engineering Congress and Exposition (IMECE2006), Paper No. IMECE2006-13558, November 5-10, Chicago, Illinois, USA.
15. Somayaji, C., Mago, P.J., and **Chamra, L. M.**, “Second Law Analysis and Optimization of Organic Rankine Cycles.” ASME Power Conference, Paper No. PWR2006-88061, Atlanta, GA, May 2-4, 2006.
16. **Chamra, L.M.**, Mago, P.J., Stone, N., and Oliver, J., “Micro-CHP (Cooling, Heating, and Power) – Not Just a Scale Down CHP.” ASME Power Conference, Paper No. PWR2006-88076, Atlanta, GA, May 2-4, 2006.
17. Mago, P.J., **Chamra, L.M.**, and Moran, A., “Optimization of Organic Rankine Cycles Using

- Dry Fluids.” Proceedings of IMECE2006, November 5-10, Chicago, Illinois, USA.
18. Mago, P.J, **Chamra, L.M.** and Somayaji, Chandramojan, “Analysis of Organic Rankine Cycles.” Proceedings of ASME Power Conference, May 2-4, 2006, Atlanta, GA, USA.
 19. Breen, M.A., Schneider, J. A., Walters, D. K., and **Chamra, L. M.**, 2004, “Modifying the Heat Transfer Characteristics of a Residential Oven to Promote Favorable Baking Results.” Proceedings of IMECE, International Mechanical Engineering Congress Expo, Anaheim, CA.
 20. **Chamra, L. M.**, McClain, S. T., and Tang, S. S., 2001, “The Use of Mathcad in a Graduate Level Two-phase Flow and Heat Transfer Course.” Proceedings of the 2001 ASEE Annual Conference and Exhibition, Albuquerque, June.
 21. **Chamra, L.M.**, and Webb, R. L., 1998, “Modeling Liquid-Side Particulate Fouling in Plain Tubes.” Proceedings: International Conference On Energy Research and Development, Vol. II, pp. 1090-1104.
 22. Cheung, F.B., K.H. Haddad, **L.M. Chamra**, F. Otero, and A.L. Brundage, 1994, "Boundary Layer Boiling on the External Bottom Surface of a Hemispherical Vessel." 10th Proc. Nuclear Thermal Hydraulics ANS Winter Annual Meeting, Washington, D.C., 155-162.
 23. Webb, R.L., Jaber, H.M., **Chamra, L.M.**, and Kim, N.H., 1991, "Enhanced Tubes for Electric Utility Steam Condensers." Proceedings: Condenser Technology Conference, EPRI Report GS-7349, pp. 2-57- 2-72.
 24. Webb, R.L., **Chamra L.M.**, 1991, "On-Line Cleaning of Particulate Fouling in Enhanced Tubes," Fouling and Enhancement Interactions, HTD-Vol. 164, pp.47-54.

TECHNICAL REPORTS

1. Mago, P.J., **Chamra, L. M.**, and N. Fumo, 2007, “Methodology to Perform a Non-Conventional Evaluation of Cooling, Heating, and Power (CHP) Systems,” Southeast Cooling, Heating, and Power Regional Application Center, U.S. Department of Energy.
2. **Chamra, L. M.**, and Stevens, J. W., 2000, "Desiccant Dehumidification Curriculum Module for Engineering/Technology HVAC Courses," Global Center for Desiccant Technology, Mississippi State University.
3. Webb, R.L., **Chamra, L.M.**, Jaber, M.H., 1991, "Enhanced Tubes for Steam Condensers," Penn State Report, DOE Contract DE-FC07-88ID12708, EPRI Contract RP1689-21.

FUNDED PROJECTS

1. Biomass Utilization, sponsored by the U.S. Department of Energy, June 2004-May 2009, \$3.5M
Principal Investigator: **Louay Chamra**
2. Micro Cooling, Heating, and Power (Micro-CHP) and Bio-Fuel Center, DOE contract DE-FG01-04ER04-01, June 2004, May 2009, \$7M
Principal Investigator: **Louay Chamra**
3. Southeastern Combined Cooling Heating and Power Regional Application Center (CHPCenterSE), sponsored by the U.S. Department of Energy, January 2006-December 2009, \$425K
Principal Investigator: **Louay Chamra (MSU)** and Keith McAllister (N.C. State)
4. Southeastern Partnerships to Advance Industrial Energy Efficiency. DOE, March 2007 - February 2008. \$67,507
Principal Investigators: P.J. Mago, C. Emplaincourt, and **L.M. Chamra**
5. Evaluation of a Micro-CHP Facility Operating on a Multi-Fuel Stirling Engine, sponsored by Mississippi Technology Alliance, November 2007-December 2008, \$65,000
Principal Investigators: P.J. Mago, K. Srinivasan, and **L.M. Chamra**
6. Propane-Fueled Combined Heat and Power (CHP) Systems. PERC. March 2007 – February 2009. \$408,111
Principal Investigators: P.J. Mago, **L.M. Chamra**
7. Delivering CHP Driven Desiccant Dehumidification and Absorptive Chiller Technology to the Marketplace, sponsored by the U.S. Department of Energy, January 2006-December 2006, \$120K
Principal Investigator: **Louay Chamra (MSU)** and Keith McAllister (N.C. State)
8. Southeastern Combined Cooling Heating and Power Regional Application Center (CHPCenterSE), sponsored by the U.S. Department of Energy, January 2005-December 2006, \$380K
Principal Investigator: **Louay Chamra (MSU)** and Alex Hobbs (N.C. State)
9. Water-Side Fouling inside Smooth and Augmented Copper Alloy Condenser Tube and Cooling Tower Water Applications, sponsored by the American Society of Heating, Refrigerating, and Air- Conditioning Engineers, June 2001- May 2004, \$186K
Principal Investigator: **Louay Chamra**

10. Evaluation of Redesign of Evaporator and Condenser Coils of Refrigeration Units, sponsored by Viking Range Corp., February 2001-December 2001, \$72K
Principal Investigators: **Louay Chamra** and Richard Forbes
11. Modeling and Optimizing of Boiling and Condensation Heat Transfer in Micro-Fin Tubes, sponsored by Heatcraft Inc. and Wolverine Tubes Inc., January 2000-December 2002, \$263K
Principal Investigators: **Louay Chamra** and B. K. Hodge
12. A Comparison of the Biological Aspects of Desiccant Versus Conventional Systems, sponsored by Mississippi Valley Gas, October 2001 - December 2002, \$84K
Principal Investigator: **Louay Chamra**
13. Advanced Desiccant Technology Research, sponsored by U.S. DOE/Oak Ridge National Laboratory and the Gas Research Institute, Hearin Foundation Grant, September 1998-February 2001, \$ 560K
Principal Investigators: B. K. Hodge, W. G. Steele, J. W. Stevens, **L. M. Chamra**, and A. Jalalzadeh-Azar
14. Global Center for Desiccant Technology, sponsored by various natural gas industry interests, January 1995-December 2001, \$ 750K
Principal Investigators: B. K. Hodge, W. G. Steele, J. W. Stevens, **L. M. Chamra**, and A. Jalalzadeh-Azar

PROFESSIONAL AFFILIATIONS

- ❖ American Society of Heating, Refrigeration, and Air-Conditioning Engineers
Chair of TC 1.3 Heat Transfer and Fluid Flow Technical Committee, 2003-2005
Member of TC 8.5 Liquid to Refrigerant Heat Exchanger Committee, 2002 – 2006
Member of TC 1.10 Cogeneration Systems
Member of TC 8.12 Desiccant Dehumidification Equipment and Components
- ❖ American Society for Engineering Education
- ❖ American Society of Mechanical Engineers
- ❖ Reviewer for the Journal of Heat Transfer
- ❖ Reviewer for the International Journal of Heat and Mass Transfer
- ❖ Reviewer for ASHRAE Transactions
- ❖ Reviewer for the Journal of Mechanical Engineering Science
- ❖ Reviewer for Chemical Engineering Communications

ADMINISTRATIVE ASSIGNMENTS

-
- ❖ Chair, Search Committee for College of Engineering Associate Dean for Research and Graduate Studies (2008)
 - ❖ Office of Research and Economic Development, Overhead Distribution Focus Group (2008)
 - ❖ Coordinator of the College of Engineering Automotive Certificate (2007-present)
 - ❖ Chair of the College of Engineering Energy Working Group (2005-present)
 - ❖ Mentor, serve as a mentor to new faculty members in the College Mentoring Program (2003-present)
 - ❖ Chair of Engineering College Faculty Council (2003-present)
 - ❖ Member of the Mechanical Engineering Graduate Committee (2000-2005)
 - ❖ Member of the Mechanical Engineering Research Strategic Planning Subcommittee (2002-2005)
 - ❖ Member and chair of the Mechanical Engineering Fluids and Heat Transfer Lab Committee (2001-2003)
 - ❖ Member of the Instructional Technology Improvement Committee (1999-2000)
 - ❖ Member of Hearin Computational Committee (1999-2003)

AWARDS

- ❖ Best Paper Award – Advanced Energy Systems Division. Entitled “Improving the Efficiency of the Advanced Injection Low Pilot Ignited Natural Gas Engine Using Organic Rankine Cycles,” in the track Energy Systems Miniaturization, Micro, and Nano Scale Energy Transport. ASME Energy Sustainable Conference 2007.
- ❖ MSU Hearin Professor of Engineering, 2003-2007
- ❖ Pi Tau Sigma “Shaft of Excellence,” Outstanding ME Faculty Member Award, 1999.

COURSES TAUGHT

<u>Undergraduate</u>	<u>Graduate</u>	
ME 3513 Thermodynamics	ME 8343	Two-phase Flow and Heat Transfer
ME 4383 Heat Exchanger Design		
ME 3313 Heat Transfer	ME 8813	Viscous Flow I
ME 4313 Intermediate Heat Transfer		

COURSES DEVELOPED

- ❖ ME 8343 “Two-Phase Flow and Heat Transfer.” This course concentrates on liquid-vapor two phase flow hydrodynamics and heat transfer and its applications to heat exchanges. This course is offered for both mechanical and chemical engineering graduate students. This course was also taught as a Distance Education course in 2000.

- ❖ ME 4383 “Heat Exchanger Design.” This course concentrates on the thermal and hydraulic design of heat exchangers and their applications. This course is offered as a technical elective for senior or graduate students. This course was also taught as a Distance Education course in 1999.

LIST OF REFERENCES

Dr. Sarah A. Rajala

Dean and Professor
Earnest W. & Mary Ann Deavenport, Jr. Chair
Bagley College of Engineering
250 McCain Hall, Box 9544
Mississippi State, MS 39762
Phone: 662-325-2270
Email: rajala@bagley.msstate.edu

Robert P. Taylor, Ph.D.

Professor and Head
Department of Mechanical Engineering
The University of Alabama
290 Hardaway Hall, 7th Avenue
Tuscaloosa, AL 35487-0276
Phone: 205.348.5422
Email: btaylor2@eng.ua.edu

Chris Ewing, President

Ewing/Kessler Mechanical Solutions, Inc.
7876 Stage Hills Blvd. Suite 104
Bartlett, TN 38133
Phone: 901.843.4870
Cell: 901.483.0270
Email: cewing@ewingkessler.com

W. Glenn Steele, Ph.D.

Bobby Shackouls Professor
William L. Giles Distinguished Professor
Department of Mechanical Engineering
Mail Stop 9552, 204 Carpenter Hall
Mississippi State University
Mississippi State, MS 39762
662.325.7305
E-mail: steele@me.msstate.edu

Mohamad S. Qatu, PhD, PE

Fellow - ASME and SAE
Professor of Mechanical Engineering
Mississippi State University
105 Carpenter, Box 9552
Mississippi State, MS 39762
Phone: 662-325-1535
Cell: 248.410.4196
E-mail: qatu@me.msstate.edu

Mark F. Horstemeyer, PhD

Center for Advanced Vehicular Systems Chair
Mechanical Engineering Department
Mail Stop 9552, 210 Carpenter Building
Mississippi State University
Mississippi State, MS 39762
Phone: (662) 325-7308(ME)
Phone: (662) 325-6613(CAVS)
E-mail: mfhorst@me.msstate.edu

Pedro Mago, PhD

Associate Professor
Mechanical Engineering Department
Mail Stop 9552, 210 Carpenter Building
Mississippi State University
Mississippi State, MS 39762
Phone: (662) 325-6602
E-mail: mago@me.msstate.edu