

Jose Oscar Mur-Miranda

jomurmiranda@alum.mit.edu

Professional Preparation

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|---------------------------------------|-----------------------------|--------------|
| Massachusetts Institute of Technology | Electrical Engineering (EE) | B.S., 1995 |
| Massachusetts Institute of Technology | EE and Computer Science | M.Eng., 1998 |
| Massachusetts Institute of Technology | EE and Computer Science | Ph.D., 2004 |

Appointments

- 2006 – Assistant Professor of Elec. and Computer Eng. (ECE), F.W. Olin College of Eng.
- 2005 – 2006 Visiting Assistant Professor of ECE, F.W. Olin College of Engineering
- 2004 – 2005 Associate Professor of ECE, Inter American University of Puerto Rico, Bayamon
- 2004 Research Consultant, Centre Nacional de Microelectrònica, Barcelona, Spain

Selected Publications

J.O. Mur-Miranda and G. Fanti, "Peak wireless power transfer using magnetically coupled series resonators," Proceedings of the 2010 IEEE Energy Conference & Exhibition, Manama, Bahrain, December 18-22, 2010.

J.O. Mur-Miranda, G. Fanti, Y. Feng, K. Omanakuttan, R. Ongie, A. Setjoadi and N. Sharpe, "Wireless power transfer using weakly coupled magnetostatic resonators," Proceedings of the 2010 IEEE Energy Conversion Congress and Expo, Atlanta, GA, September 12-16, 2010.

C. Lee, D. Stamp, N. Kapania and J.O. Mur-Miranda, "Harvesting vibration energy using nonlinear oscillations of an electromagnetic inductor," Proceedings of SPIE Vol. 7683 Energy Harvesting and Storage: Materials, Devices, and Applications, April 5, 2010.

S. Meninger, J.O. Mur-Miranda, R. Amirtharajah, A.P. Chandrakasan and J.H. Lang, "Vibration-to-electric energy conversion," IEEE Transactions on Very Large Scale Integration (VLSI) Systems, Volume 9, Issue 1, February 2001, pages 64-76.

A.H. Epstein, S.D. Senturia, G. Anathasuresh, A. Ayon, K. Breuer, K-S. Chen, F.F. Ehrich, G. Gauba, R. Ghodssi, C. Groshenry, S.A. Jacobson, J.H. Lang, C-C. Lin, A. Mehra, J.O. Mur-Miranda, S. Nagle, D.J. Orr, E. Piekos, M.A. Schmidt, G. Shirley, S.M. Spearing, C.S. Tan, Y-S. Tzeng and I.A. Waitz, "Power MEMS and Microengines," Proceedings of the 1997 International Conference on Solid-State Sensors and Actuators, Chicago, IL, June 16-19, 1997, pages 753-756.

Synergistic Activities

2005 – Worked with a research group in the Ocean Engineering department at MIT to write a white paper summarizing the state of the art in power harvesting from waves and ocean currents and provided a comprehensive analysis for future research and applications.

2006-2007 – Designed a low cost MEMS laboratory for use in undergraduate education at Olin College using a variety of materials and techniques such as PDMS for biological and microfluidics applications and silicon for electromechanical devices. Incorporated the support of the Microsystems Technology Lab at MIT and the BioMicroElectroMechanical Systems Resource Center at MGH.

2007-present – Researching wireless power transfer using resonant magnetic coupling.

June-September 2006 – Estimated the relative accuracy of different ASTM methods for estimating the net and gross heat of combustion of hydrocarbons for an environmental laboratory in Hato Rey, PR.

2009 – Assisted in the rejuvenation process of the Boston chapter of the IEEE Power and Energy Society and hosted all their meetings at Olin College.

June 2009 – Helped a robotics firm write a proposal for the DoD for the use of robots as nursing assistants. Focused on the analysis and design of multipole torque motors for this application.

July 2009 – Served as an evaluator for a NSF Course, Curriculum, and Laboratory Improvement (CCLI) Type 1 panel.

August 2009 – Served as mentor at the 2009 International Development Design Summit in Kumasi, Ghana.

September 2009 – Served as an evaluator for ARPA-E in grid scale storage and renewable power panel.

February-March 2010 – Helped an engineering design firm and another Olin faculty member write a proposal for the Navy STTR Program for the use of magnetorestrictive materials in energy harvesting.

July 2010 – Served as mentor at the 2010 International Development Design Summit in Fort Collins, Colorado.

Collaborators & Other Affiliations

(i) Collaborators

Chris Lee, Associate Professor of Mechanical Engineering, F.W. Olin College of Engineering

David Arnold, Associate Professor of Electrical and Computer Engineering, University of Florida

(ii) Graduate and Postdoctoral Advisors

Jeffrey H. Lang, Professor of Electrical Engineering, MIT

(iii) Professional Societies

Institute of Electrical and Electronics Engineers (IEEE)

American Society for Engineering Education (ASEE)

Society of Women Engineers (SWE)