

## CONTRACTS AND GRANTS

1. J.P. Zheng (single PI), Project Dates: 02/06/2013-02/05/2014, Title: Development of Li-ion Conductive Flexible Membrane for Li-air Batteries, Sponsor: US Army-CERDEC.
2. J.P. Zheng (single PI), Project Dates: 01/01/2013-01/01/2014, Title: High energy density supercapacitors, Sponsor: Florida State University GAP Program.
3. J.P. Zheng (PI), M. Weatherspoon, and E. Kalu, Project Dates: 08/01/2008-07/31/2018, Title: Development of Advanced Energy Storage Devices, Sponsor: National Science Foundation (NSF), as a subcontract to the proposal of “Future Renewable Electric Energy Delivery and Management (FREEDM) Systems”, led by Alex Huang at North Carolina State University, co-PIs by M.L. Crow, S. Dale, G.T. Heydt, and J.P. Zheng.
4. H. Li and J.P. Zheng (co-PI), Awarded Period: 7/1/10-6/30/13, Title: Improving Power Quality and Safety Operation of Multiple Grid-Connected Residential Photovoltaic (PV) Systems with Distributed Storage, Control and Power Conditioning System, Sponsor: National Science Foundation (NSF).
5. N. Dai, F.Y. Huang, S.L. Wang, X.N. Li, J.P. Zheng (co-PI), and D. Wei, Project Dates: 04/01/2009-04/01/2014, Title: An International Collaboration Group on Solar Cell Technologies Development, Sponsor: Chinese Academy of Sciences.
6. J.P. Zheng (PI) and R. Liang, Project Dates: 5/17/2011-5/15/2012, Title: Desktop machines for battery and capacitor research and development, Sponsor: Florida State University.
7. J.P. Zheng (single PI), Award Period: 08/29/2011-8/28/2012, Title: Characterization of Catalytic Electrodes and PEMFCs, Sponsor: Bing Energy Inc.
8. J.P. Zheng (PI), W. Zhu, R. Liang, and H. Chen, Project Dates: 09/01/2010-12/31/2012, Title: Development of a Low-Cost and High-Efficiency 500 W Portable PEMFC System, Sponsor: Department of Energy/Florida Hydrogen Initiative.
9. J.P. Zheng (single PI), Project Dates: 10/01/2010-12/31/2012, Title: 3-D Nanofilm Asymmetric Ultracapacitor, a phase II STTR Project, Sponsor: Department of Energy.
10. J.P. Zheng (PI), P. Andrei, and T. Liu, Awarded Dates: 8/15/10-12/31/12, Title: Research and Development on Some Critical Issues for High Energy and Power Densities, and Good Lifespan of Li-air Batteries, Sponsor: US Army CERDEC.
11. J.P. Zheng (single PI), Award Dates: 5/19/10-5/18/11, Title: Develop Li/Air Rechargeable Batteries, Sponsor: Savannah River National Laboratory.
12. J.P. Zheng (single PI), Award Period: 5/15/10-12/31/10, Title: Study Stability and Reliability of PEMFCs made with Buckypaper Supported Catalytic Electrodes, Sponsor: Bing Energy Inc.

13. J.P. Zheng (single PI), Project Dates: 1/6/2010-12/31/2011, Title: In-Pile Temperature Monitor and Control for ATR, Sponsor: Idaho National Laboratory.
14. R.Q. Fu and J.P. Zheng (co-PI), Project Dates: 1/1/2010-12/31/2011, Title: In Situ Electrochemical-NMR Spectroscopy of Lithium Rechargeable Batteries, Sponsor: The National High Magnetic Field Laboratory/National Science Foundation.
15. J.P. Zheng (single PI), Project Dates: 08/01/09-04/15/10, Title: 3-D Nanofilm Asymmetric Ultracapacitor, a phase I STTR Project, Sponsor: Department of Energy.
16. J.P. Zheng (PI), R. Liang, C. Zheng, and B. Wang, Project Dates: 01/01/2009-01/01/2012, Title: Planning award for High Performance and Low Cost Fuel Cells for Future Vehicles, Sponsor: Institute for Energy Systems, Economics and Sustainability (IESES), Florida State University.
17. C.S. Edrington, D. Cartes, F. Alvi, H. Li, J.P. Zheng (co-PI), Juan Ordonez, M. Steurer, Project Dates: 01/01/2009-01/01/2012, Title: Microgrids for a Sustainable Energy Future, Sponsor: Institute for Energy Systems, Economics and Sustainability (IESES), Florida State University.
18. J.P. Zheng (single PI), Project Dates: 12/01/2008-12/01/2010, Title: Investigation of Fluoride Based Electrode for High Energy Density Li-Ion Rechargeable Batteries, Sponsor: US Army-CERDEC.
19. J.P. Zheng (single PI), Project Dates: 03/01/2008-03/01/2009, Title: Development of Fuel Cell/Supercapacitor Hybrid Energy Devices, Sponsor: Florida State University GAP Program.
20. J.P. Zheng (PI), R. Liang, C. Zhang, and B. Wang, Project Dates: 10/01/2007-09/30/2010, Title: Optimization of specific capacity of Li-Air Batteries Using Carbon Nanotube Sheets as Air Electrodes, Sponsor: US Army-CERDEC.
21. J.P. Zheng (single PI), Project Dates: 10/01/2007-09/30/2008, Title: Study of high-speed photoconductive semiconductor switches and other photonic devices for military applications, Sponsor: US Army Research Laboratory.
22. J.P. Zheng (single PI), Project Dates: 10/01/2007-09/30/2008, Title: Investigation of Co-intercalation in Li-ion based cell for improvement of energy and power densities, Sponsor: US Army-CERDEC.
23. B. Wang, R.G. Alamo, J.S. Brooks, N. Dalal, A. El-Azab, H. Kroto, B.W. Kwan, R. Liang, A.G. Marshall, O.I. Okoli, Y.B. Park, J.J. Pignatiello, C. Zhang, and J.P. Zheng (Co-PI), Project Dates: 11/01/2006-11/01/2009, Title: Center for Excellence in Advanced Materials, Sponsor: Florida State University System.

24. J.P. Zheng (single PI), Project Dates: 10/01/2006-09/30/2008, Title: Fuel Cell/Supercapacitor Monolithic Hybrid Devices for High Power Density and High Fuel Efficiency, Sponsor: US Army-CERDEC.
25. J.P. Zheng (single PI), Project Dates: 05/01/2006-05/01/2007, Title: Investigation of Dielectric Insulators for Cryogenic Applications, Sponsor: Center for Advanced Power Systems/Department of Energy.
26. J.P. Zheng (single PI), Project Dates: 05/01/2005 to 04/30/2007, Title: Investigation and Improvement of Low Temperature Performance of Li-Ion Batteries, Sponsor: US Army Communications-Electronics Command.
27. P. Andrei and J.P. Zheng (Co-PI), Project Dates: 01/01/2005-03/01/2007, Title: Design and Modeling of Nanoscale Semiconductor Devices, Sponsor: U. S. Army High Performance Computing Research Center.
28. J.P. Zheng (single PI), Project Dates: 05/01/2004-05/01/2005, Title: Investigation of Capacity Degradation of Li-Polymer Batteries Using AC Impedance Spectrometer and Micro-structure Analysis, Sponsor: US Army Communications-Electronics Command.
29. L.J. Tung, J.P. Zheng (Co-PI), and J.R. Simpson, Project Dates: 12/01/2003-03/01/2006, Title: Standards Research, Testing & Training Development for the Traffic Engineering Research Lab, Sponsor: The Florida Department of Transportation.
30. Y. Xin and J.P. Zheng (Co-PI), Project Dates: 03/01/2003 to 06/01/2005, Title: Monolithic Integration of Strongly Correlated Transition Metal Oxides with Complementary Functionalities through Thin Film Nano-Engineering, Sponsor: Cornerstone Project, Florida State University.
31. J.P. Zheng (PI) and R. Fu, Project Dates: 03/01/2003-02/28/2004, Title: In-situ NMR Imaging of Lithium-Polymer Batteries During Charge and Discharge Cycle, Sponsor: US Army Communications-Electronics Command.
32. C.J. Chen, Y.S. Haik, J.P. Zheng (Co-PI), W.C. Chin, and H. Garmestani, Project Dates: 03/01/2002-12/31/2002, Title: Center for Applications of Nanotechnology in Micro Total Analysis Systems, Sponsor: Cornerstone Project, Florida State University.
33. J.P. Zheng (single PI), Project Dates: 05/01/2002-04/30/2005, Title: Integrated Catalyst and Membrane for Fuel Cell Applications, Sponsor: Cornerstone Project, Florida State University.
34. J.P. Zheng (single PI), Project Dates: 01/01/2002-05/01/2003, Title: Investigation of Dielectric Properties of Cryo-Insulations for Superconducting Power Cables, Transformers, and Machines in Electric Ships, Sponsor: Center for Advanced Power Systems, FSU/Office for Naval Research.

35. L.J. Tung, B.W. Kwan, J.P. Zheng (Co-PI), J.R. Simpson, and W.V. Ping, Project Dates: 01/01/2002-07/01/2004, Title: Advanced Traffic Engineering in Support of Florida's Initiatives, Sponsor: The Florida Department of Transportation.
36. C.J. Chen, Y.S. Haik, and J.P. Zheng (Co-PI), Project Dates: 05/01/2001-04/30/2003, Title: Magnetic Micro Mechanical Systems, Sponsor: Cornerstone Project, Florida State University.
37. J.P. Zheng (PI) and R. Fu, Project Dates: 10/01/2000 to 09/30/2001, Title: Investigation of Capacity Degradation in Lithium-ion Batteries at Low Temperatures Using NMR Spectroscopy, Sponsor: US Army Communications-Electronics Command.
38. Y.S. Haik, C.J. Chen, and J.P. Zheng (Co-PI), Project Dates: 05/01/2000-04/30/2001, Title: Development of Magnetically Driven Micro Pump, Sponsor: Sandia National Laboratories.
39. J.P. Zheng (single PI), Project Dates: 04/01/2000-03/31/2004, Title: Electrochemical Capacitors and Hybrid Power Sources for Space Applications, Sponsor: National Aeronautics and Space Administration (NASA).
40. L.J. Tung, B.W. Kwan, and J.P. Zheng (Co-PI), Project Dates: 01/01/2000-12/31/2001, Title: Advanced Traffic Engineering and Its Technologies, Sponsor: The Florida Department of Transportation.
41. J.P. Zheng (single PI), Project Dates: 10/01/1999-09/30/2001, Title: Capacitors with Improved RuO<sub>2</sub> Electrodes and Electrolytes, a phase II STTR Project, Sponsor: Air Force Research Laboratory.
42. R. Fu and J.P. Zheng (Co-PI), Project Dates: 08/01/1999-07/31/2001, Title: Solid State NMR Study of the Hydrrous Ruthenium Oxide Electrode Materials, Sponsor: Cornerstone Project, Florida State University.
43. C.J. Chen, Y.S. Haik, J.P. Zheng (Co-PI), and V.M. Pai, Project Dates: 06/01/1999-05/31/2001, Title: Wireless Magnetic Actuators, Sponsor: Sandia National Laboratories.
44. J.P. Zheng (PI) and S.M. Burbin, Project Dates: 07/01/1999-06/30/2004, Title: Sub-Microsecond RHEED Investigation of Pulsed Laser Deposition Film Growth Dynamics, Sponsor: National Science Foundation (NSF).
45. J.P. Zheng (single PI), Project Dates: 05/01/1999-09/30/1999, Title: Ultracapacitor Applications, Sponsor: Lockheed Martin Corp.
46. J.P. Zheng (single PI), Project Dates: 06/01/1999-01/31/2000, Title: Optical Spectra and Nonlinearity in Semiconductor Doped Glasses, Sponsor: CRC COFRS, Florida State University.
47. J.P. Zheng (single PI), Project Dates: 09/01/1998-06/30/1999, Title: Improved Capacitor Using Amorphous RuO<sub>2</sub>, a phase I STTR Project, Sponsor: Air Force Research Laboratory.

48. J.P. Zheng (PI) and T.R. Jow, Project Dates: 10/01/1996-09/30/1998, Title: Ni-Metal Hydride Batteries---Japanese and Chinese Ni-MH Batteries, Sponsor: Army Materials Command.
49. T.R. Jow and J.P. Zheng (Co-PI), Project Dates: 10/01/1996-02/28/1997, Title: Prototype Devices of High Power Electrochemical Capacitors with  $\text{RuO}_2 \cdot x\text{H}_2\text{O}$  Electrodes, Sponsor: Kim Technologies International, Inc.
50. T.R. Jow and J.P. Zheng (Co-PI), Project Dates: 10/01/1996-07/01/1997, Title: Development of Electrolytes for Hybrid Electrochemical-Electrolytic Capacitors, Sponsor: Wilson Greatbatch, Ltd.
51. T.R. Jow and J.P. Zheng (Co-PI), Project Dates: 09/01/1996-02/28/1998, Title: Non-aqueous Electrolyte Development for High Power/High Energy Electrochemical Capacitors, Sponsor: Department of Energy.
52. J.P. Zheng (PI) and T.R. Jow, Project Dates: 09/01/1996-02/28/1998, Title: High Energy Density Electrochemical Capacitors for Electric Vehicles Part II, Sponsor: Advanced Research Projects Agency.
53. J.P. Zheng (PI) and T.R. Jow, Project Dates: 10/01/1995-09/30/1997, Title: Osaka Carbon---Carbon Materials for Superconductors and Batteries Applications, Sponsor: Army Materials Command.
54. T.R. Jow and J.P. Zheng (Co-PI), Project Dates: 10/01/1995-09/30/1996, Title: Novel Carbon Materials for Electrochemical Capacitors and Li-ion Batteries, Sponsor: Army Research Laboratory.
55. T.R. Jow and J.P. Zheng (Co-PI), Project Dates: 10/01/1994-09/30/1996, Title: Power Capacitor-Japanese Electrochemical Capacitors, Sponsor: Army Materials Command.
56. T.R. Jow, J.P. Zheng (Co-PI), and P.J. Cygan, Project Dates: 02/01/1994-11/01/1994, Title: High Energy Density Electrochemical Capacitors for Electric Vehicles, Sponsor: Advanced Research Projects Agency.
57. T.R. Jow, J.P. Zheng (Co-PI), and P.J. Cygan, Project Dates: 10/01/1993-09/30/1994, Title: New Electrode Materials for High Energy Density Electrochemical Capacitors for Electric Power Assist, Sponsor: Army Research Laboratory.
58. J.P. Zheng (single PI), Project Dates: 08/01/1992-12/31/1992, Title: Superconducting Infrared Detectors with BSCCO Thin Films, Sponsor: Excel Technology Inc.
59. J.P. Zheng (single PI), Project Dates: 05/01/1991-04/30/1992, Title: Superconducting Infrared Detectors with Y-Ba-Cu-O Thin Films, Sponsor: Excel Technology Inc.