

## List of Publications

### Refereed Publications

#### Peer-Reviewed Journals

Korde, U.A., 'Large-displacement electrostatic actuation of membrane reflectors through mechanical control of electrode-membrane gap', *J. Intelligent Material Systems and Structures*, accepted for publication, Sept, 2009

Korde, U.A., 'Large-displacement control of variable area electrostatic actuation for membrane reflectors', *J. Intelligent Material Systems and Structures*, Online-First Sept. 18, 2008 (26pp); doi: 10.1177/1045389X08096258

Korde, U.A., Wickersham M.A., Carr S.G., 'Effect of a negative capacitance circuit on the out-of-plane stiffness and dissipation of piezoelectric membranes', *J. Smart Materials and Structures*, 17 (2008) 035017 (13pp); doi: 10.1088/0964-1726/17/3/035017

Korde U.A., 'Studies on area controlled electrostatic actuation of small membrane reflectors', *J. Intelligent Material Systems and Structures*, Online-First April 21, 2008, (22pp); doi: 10.1177/1045389X07086356

Jenkins, C.H., and Korde, U.A., 'Experimental membrane vibrations: an historical perspective and recent results', *J. Sound and Vibration*, v. 295 (3-5), pp. 602-613, August 2006

Korde, U.A., 'Study of a jet-propulsion method for an underwater vehicle', *Ocean Engineering*, v. 31, pp. 1205-1218, 2004

Korde, U.A., 'Systems of reactively controlled oscillating bodies in wave energy conversion', *Applied Ocean Research*, v. 25, n. 2, pp. 79-91, 2003

Lin, F., Schoen M.P., Korde, U.A., 'Numerical investigation of rub related vibration in rotating machinery', *J. Vibration and Control*, v. 7, n. 6, pp. 833-848, 2001

Korde, U.A. 'Phase control of floating bodies from an onboard reference', *Applied Ocean Research*, v. 23, n. 5, pp. 251-262, 2001

Korde, U.A., 'Latching control of wave energy devices from an active reference', *Ocean Engineering*, v. 29, n. 11, pp. 1343-1355, 2001

Korde, U.A. 'Use of oscillation constraints in providing a reaction on deep-water floating wave energy devices', *Int. J. Offshore and Polar Eng.*, v. 11, n. 2, pp. 155-160, 2001

Korde, U.A. 'Hydrodynamics of a tail-tube buoy', *Ocean Engineering*, v. 27, pp. 1473-1484, 2000

Korde, U.A., 'On providing a reaction for efficient wave energy absorption by floating devices', *Applied Ocean Research*, v. 21, n. 6, pp. 587-599, 1999

Korde, U.A., Karlsson, P., and Flinkberg, E., 'Use of an on-board motion compensated block to enhance wave-energy conversion by floating devices', *J. JAMSTECR*, v. 38, Oct. 1998

Korde, U.A., 'On efficient primary energy conversion in irregular waves', *Ocean Engineering*, v. 26, pp. 625-651, 1999

Korde, U.A., 'Active heave compensation on drill-ships in irregular waves', *Ocean Engineering*, v. 25, no. 7, pp. 541-561, 1998

Korde, U.A., 'Performance of a wave-energy device in shallow-water, nonlinear waves: Part I', *Applied Ocean Research*, v. 19, no. 1, pp. 1-12, 1997

Korde, U.A., 'Performance of a wave-energy device in shallow-water, nonlinear waves: Part II', *Applied Ocean Research*, v. 19, no. 1, pp. 13-20, 1997

Gonzalez-Galvan E, Skaar SB, Korde UA, Chen W, 'Application of a precision enhancing technique to 3-D camera-space manipulation', *Int. J. Robotics Research*, v. 16, n. 2, 1998, pp. 240-257

Chen, W.Z., Korde, U.A., Skaar, S.B., 'Position control experiments using vision', *Int. J. Robotics Research*, v. 13, no 4, pp. 199-208, 1994

Korde, U.A., 'On the control of wave energy devices in multi-frequency waves', *Applied Ocean Research*, v. 13, no. 3, pp. 132-141, 1991

Korde, U.A., 'Development of a reactive control apparatus for a 2-dimensional oscillating water column wave energy device', *Ocean Engineering*, v. 18, no. 5, pp. 465-483, 1991

Korde, U.A., 'A power take-off mechanism for maximizing the performance of an oscillating water column wave energy device', *Applied Ocean Research*, v. 13, no. 2, pp. 75-81, 1991

Korde, U.A., 'Study of a wave energy device for possible application in communication and spacecraft propulsion', *Ocean Engineering*, v. 17, no. 6, pp. 587-599, 1990

### **Technical Monthly**

Korde, U.A., 'Active control applications in wave energy conversion', *Sea Technology*, v. 43, n. 7, July 2002 (**invited article**) (*Sea Technology* is equivalent in nature to *Mechanical Engineering* and *Aerospace America*.)

## **Research Monograph**

Korde, U.A., *Optimal Control of Floating Wave Energy Devices*, Research Monograph, Marine Technology Department, JAMSTEC, January 1999

## **Peer-Reviewed Conferences**

Robinson LK, Wickersham MA, Korde UA, 'Membrane mirrors with boundary located actuators', *50<sup>th</sup> SDM/17<sup>th</sup> AIAA/ASME/ASCE Adaptive Structures Conf.*, in review

Wickersham MA, Fehrman BC, Robinson LK, Downs AW, Korde UA, 'Electrostatic actuation with discrete area actuation for steering and focusing with membrane mirrors', *16<sup>th</sup> SPIE Smart Structures and Materials Conf.*, in review

Fontaine MR, Wickersham MA, Korde UA., 'Altering the natural frequencies of simply-supported piezoelectric membranes using negative capacitance circuits', *16<sup>th</sup> SPIE Smart Structures and Materials Conf.*, in review

Fontaine MR, Wickersham MA, Korde UA., 'Modifying the natural response of piezoelectric membranes with negative capacitance circuits', *50<sup>th</sup> SDM/16<sup>th</sup> AIAA/ASME/ASCE Adaptive Structures Conf.*, in review

Zelfer TJ, Korde UA, 'Application of expanded light weight polarized polypropylene in noise shielding', *50<sup>th</sup> SDM/16<sup>th</sup> AIAA/ASME/ASCE Adaptive Structures Conf.*, in review.

Zelfer TJ, Korde UA, 'Lightweight polarized polypropylene foam for noise shielding', *16<sup>th</sup> SPIE Smart Structures and Materials Conf.*, in review

Wickersham MA, Downs A, Korde UA, Hofacker ME, Kingsbury NA, 'Membrane Reflectors with Variable Area Electrostatic Actuation for Laser Beam Guidance', *Proc. 49<sup>th</sup> SDM/16<sup>th</sup> AIAA/ASME/ASCE Adaptive Structures Conf.*, Schaumburg, IL, April 2008

Wickersham MA, Downs A, Korde UA, Hofacker ME, Kingsbury NA, 'Recent Studies on Electrostatic Variable Area Actuation of Membrane Reflectors for Beam Guidance', *Proc. 15<sup>th</sup> SPIE Smart Structures and Materials Conf.*, San Diego, CA, March 2008

Petersen EA, Barnes KA, Korde UA, 'Studies on Wave Propagation on Thin Lightweight Structures', *Proc. 15<sup>th</sup> SPIE Smart Structures and Materials Conf.*, San Diego, CA, March 2008

Barnes KA, Petersen EA, Korde UA, 'Wave Propagation on Thin Lightweight Structures', *Proc. 16<sup>th</sup> AIAA/ASME/ASCE Adaptive Structures Conf.*, Schaumburg, IL, April 2008

Wickersham MA, Zelfer TJ, Korde UA, Petersen EA, 'Recent Studies on Electronic Tuning of Out of Plane Stiffness and Dissipation of Piezoelectric Polymer Membranes', *Proc. 15<sup>th</sup> SPIE Smart Structures and Materials Conf.*, San Diego, CA, March 2008

Wickersham MA, Zelfer TJ, Korde UA, Petersen EA, 'Electronic Control of Stiffness and Dissipation of Piezoelectric Polymer Membranes', *Proc. 16<sup>th</sup> AIAA/ASME/ASCE Adaptive Structures Conf.*, Schaumburg, IL, April, 2008

Korde UA, 'Studies on a submerged flexible sheet type wave energy device with distributed point-wise secondary power conversion', *Proc. 26<sup>th</sup> ASME Offshore Mechanics and Arctic Engineering (OMAE) Symp.*, June 2007

Korde UA, Wickersham MA, Farke JJ, Hofacker ME, 'Electrostatically actuated small circular membrane mirrors for laser beam guidance', *Proc. 48<sup>th</sup> AIAA SDM/15<sup>th</sup> Adaptive Structures Conf.*, Honolulu, HI, April 2007

Korde UA, Wickersham MA, Farke JJ, Hofacker ME, 'Studies on small circular mirrors with electrostatic actuation and closed loop control', *Proc. 14<sup>th</sup> SPIE Smart Structures/Materials Conf.*, San Diego, CA, March 2007

Korde UA, Petersen EA, Daugaard D, 'In-plane vibration response of piezoelectrically actuated membranes', *Proc. 48<sup>th</sup> AIAA SDM/15<sup>th</sup> Adaptive Structures Conf.* Honolulu, April, 2007

Korde UA, Petersen EA, Daugaard D, 'In-plane vibration of membrane strips and sheets with piezoelectric actuation and sensing', *Proc. 14<sup>th</sup> SPIE Smart Structures and Materials Conf.*, San Diego, March 2007

Korde UA, Wickersham, MA, Zelfer, TJ, Jenkins CH, Kjerengtroen L, 'On semi-active enhancement of the dissipation provided by piezoelectric films', *Proc. 14<sup>th</sup> SPIE Smart Structures and Materials Conf.*, San Diego, March 2007

Korde U.A., Wickersham, M.A., Carr, S.G., Jenkins, C.H., 'Active control of material damping in a piezoelectric membrane', *Proc. 46<sup>th</sup> AIAA SDM/14<sup>th</sup> Adaptive Structures Conference*, Newport, RI, May 2006

Korde, U.A., Jenkins, C.H., Petersen, E.A., 'Acoustic energy propagation across cracks in a thin membrane structure', *Proc. 46<sup>th</sup> AIAA SDM/14<sup>th</sup> Adaptive Structures Conference*, Newport, RI, May 2006

Korde, U.A., Jenkins, C.H., 'Studies on small rectangular membranes with actuation along the boundary', *Proc. 46<sup>th</sup> AIAA SDM/14<sup>th</sup> Adaptive Structures Conference*, Newport, RI, May 2006

Korde, U.A., Wickersham M.A., Carr, S.G., Jenkins, C.H., 'Active control of stiffness and damping of piezoelectric films', *Proc. 13<sup>th</sup> SPIE Smart Structures and Materials Conf.*, San Diego, March 2006

Korde, U.A., Jenkins, C.H., Petersen, E.A., 'Energy transfer across cracks in a thin membrane strip', *Proc. 13<sup>th</sup> SPIE Smart Structures and Materials Conf.*, San Diego, March 2006

Korde, U.A., Jenkins, C.H., 'Adaptive rectangular membranes actuated near boundaries', *Proc. 13<sup>th</sup> SPIE Smart Structures and Materials Conf.*, San Diego, March 2006

Korde, U.A., Langerman, M.A., Sears, J.W., 'Development of a smart substrate for a laser powder deposition process', *Proc. 13<sup>th</sup> SPIE Smart Structures and Materials Conf.*, San Diego, March 2006

Korde, U.A., Langerman, M.A., Hainy, M.E., Zelfer, T.J., Sears, J.W., 'Active control of heat induced deformation in a laser deposition process', *Proc. 24<sup>th</sup> Int. Cong. Appl. Lasers and Electro- Optics (ICALEO)*, Laser Institute of America, Oct. 2005

Koester, J.J., Langerman M.A., Sears J.W., Korde U.A., 'Laser calorimeter for absorptivity measurement', *Proc. 24<sup>th</sup> Int. Cong. Appl. Lasers and Electro- Optics (ICALEO)*, Laser Institute of America, Oct. 2005

Koester J.J., Langerman M.A., Sears J.W., Korde U.A., Buck GA, "Preliminary design of a calorimeter for experimental determination of effective absorptivity of metal substrates during laser powder deposition", *Proc. ASME- IMECE*, Orlando, Nov. 2005

Korde, U.A., and Jenkins, C.H., 'Lightweight multifunctional actuation systems', *Proc. 12<sup>th</sup> SPIE Smart Structures and Materials Conf.*, San Diego, CA, March 2005

Korde, U.A., Jenkins, C.H., Sears, J.W., Husman, M.J., 'Development of a micromotor design for space applications', *Proc. CANEUS 2004 Micro-technology Conf.*, Monterey, CA, 2004

Pollard, E.L., Korde, U.A., Jenkins, C.H., 'Shape memory alloy microactuators for space applications', *Proc. CANEUS 2004 Micro-technology Conf.*, Monterey, CA, 2004

Korde U.A., Langerman M.A., Buck G.A., Kalanovic V.D., 'Feedforward laser power specification for uniform cooling of thin-walled parts', *Proc. ASME- IMECE*, Anaheim, CA, Nov. 2004

Langerman , M.A., Buck, G.A., Korde, U.A., and Kalanovic, V.D., "Thermal Control of Laser Powder Deposition - Heat Transfer Considerations", *Proc. ASME- IMECE*, Anaheim, CA, Nov. 2004

Korde, U.A., 'On controlled oscillating wave energy converters with submerged reaction mass', *Proc. 22<sup>nd</sup> ASME-Offshore Mech. And Arctic Engr. (OMAE) Conf.*, Cancun, Mexico, June 2003

Korde, U.A., 'Nonlinear dynamics of a damped floating body under switching control', *Proc. 21<sup>st</sup> ASME Offshore Mechanics, Ocean, and Arctic Engineering Conf.*, Oslo, Norway, June 2002

Korde, U.A., Schoen, M.P., and Lin, F., 'Strategies for time-domain control of wave energy converters in irregular waves', *Proc. 11<sup>th</sup> Int. Soc. Offshore and Polar Engr. (ISOPE) Conf.*, Stavanger, Norway, June 2001

Korde, U.A., 'Control system applications in wave energy conversion', *Proc. MTS/IEEE Oceans 2000*, Providence, RI, Sept. 2000 (**invited paper**)

Korde, U.A., 'On the use of oscillation constraints in providing a reaction for floating wave energy converters', *Proc. 10<sup>th</sup> Int. Soc. Offshore and Polar Engr. (ISOPE) Conf.*, Seattle, May, 2000

Korde, U.A., 'On control approaches relevant to wave energy conversion', *Proc. IEEE Oceans 98*, Nice, France, Sept. 1998

Pizer, D.J. and Korde, U.A., 'Recent studies on Mighty Whale hydrodynamics', *Proc. Third European Wave Energy Conference*, Patras, Greece, Sept. 1998

Korde, U.A., 'Active heave compensation in deep-water drilling and wave-energy conversion', *Proc. 17<sup>th</sup> ASME Offshore Mechanics and Arctic Engineering Symp. (OMAE-98)*: Offshore Tech., Lisbon, Portugal, July 1998

Korde, U.A., 'Control strategies for oscillating water column wave energy devices', *Proc. Second European Wave Energy Conference*, Lisbon, Portugal, Nov. 1995

Korde, U.A., 'Nonlinear dynamics of a system of cooperating robots', *28<sup>th</sup> ISATA Robotics, Vision, and Motion Conference*, Stuttgart, Germany, Sept. 1995

Korde, U.A., 'On the dynamics of a robotic MIG welding process', *Proc. 5<sup>th</sup> RI/SME World Conference on Robotics Research*. Cambridge, MA, September 1994

Korde, U.A., Skaar, S.B., Gonzalez, E., 'Three-dimensional camera-space manipulation using servoable cameras', *Proc. Intelligent Robots and Computer Vision, SPIE OE/Tech Conf.*, Boston, MA, 1992.

Korde, U.A., Chen. W.Z., Skaar, S.B., 'Three-dimensional rigid-body positioning using camera-space control', *Proc. 29<sup>th</sup> Annual Allerton Conf. on Control, Decision, and Computing*, Allerton, IL, 1991 (**invited paper**)

Korde, U.A., 'On a wave energy device for possible application in communication and spacecraft propulsion', *Proc. 3 rd Int. Symp. on Ocean Wave Energy Utilization*, Tokyo, Japan, 1991

Korde, U.A., 'Control system for a wave energy device in multi-frequency waves', *Proc. 3 rd Int. Symp. on Ocean Wave Energy Utilization*, Tokyo, Japan, 1991.

Korde, U.A., Maeda, H., 'OWC type absorbing wavemaker', *Proc. Int. Conf. TECHNO-OCEAN*, Kobe, Japan, 1988.

Maeda, H., Korde, U.A., Suzuki, F., 'Optimized design of attenuator OWCs', *Proc. Int. Conf. PACON*, Honolulu, HI, 1988

Maeda, H., Korde, U.A., Hayashi, H. 'Optimization of the attenuator OWC wave energy device', *Proc. 2 nd Symp. on Wave Energy Utilization*, Tokyo, Japan, 1987

Raju, V.S., Ravindran, M. and Korde, U.A. 'Studies on the oscillating water column (OWC) wave energy device', *Proc. IEEE Oceans 84*, New York, NY, 1984

### **Thesis, Dissertation, Other Important Reports**

Korde, U.A., 'Ocean wave energy conversion projects in Japan', *Special Scientific Report, National Science Foundation*, INT 9815, Arlington and Tokyo Office Web Sites, posted April 9, 1998, URLs: <http://www.nsf.gov/cgi-bin/getpub?int9815> ; <http://www.twics.com/nsftokyo/ssr98-08.html>

Korde, U.A., 'Vision guided manipulation on autonomous underwater rovers', *Technical Report*, JAMSTEC, March 1998

Korde, U.A., *Camera-Space Manipulation Using Natural Visual Information*, Ph.D. thesis, University of Notre Dame, 1993

Korde, U.A., *Reactive Control of Oscillating Water Column Wave Energy Devices*, Master's thesis, University of Tokyo, 1988

### **Non-refereed Publications (abstracts reviewed)**

Korde, U.A., Langerman, M.L., Kalanovic, V.D., 'Feedforward planning of laser deposition', *AEROMAT 2005 Conf.*, presented in June 2005.

Langerman, MA, Korde, UA, Kalanovic, VD, 'Heat transfer model for laser deposition', *AEROMAT 2005 Conf.*, presented in June 2005.

Washio, Y., Ohsawa, H., Imai, M., Korde, U.A., Ito, H., 'Floating wave energy prototype Mighty Whale', *1 st Coastal Environ. Science and Tech. Panel, U.S.-Japan Natural Resources (UJNR) Conf.*, Tokyo, Japan, March, 1998

Krupicka, G.L., McGinnis, R.E., Korde, U.A., 'Engineering Graphics at Christian Brothers University', *Proc. SE-ASEE Annual Meeting*, Greensboro, NC, April 1994