

Umesh A. Korde

Department of Mechanical Engineering
South Dakota School of Mines and Technology
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E-mail: Umesh.Korde@sdsmt.edu

- Education:**
- Ph. D** University of Notre Dame, USA, Mechanical Engineering, 1993.
Research Focus: Dynamics and Control: Robotics and 3-D vision-based position control.
 - M. Eng.** University of Tokyo, Japan, Naval Architecture and Ocean Engineering, 1988.
Research Focus: Dynamics and Control: Active control of oscillating bodies; wave energy conversion.
 - B. Tech. (Hon.)** Indian Institute of Technology, Kharagpur, India, Naval Architecture and Marine Engr., 1982.
(2 nd in graduating class of 13).

2003 (Aug.) – Present

South Dakota School of Mines and Technology, Rapid City, SD

Positions Held

August 2010 – Present

Larry A. Pearson Endowed Professor for Sustainable Energy, Department of Mechanical Engineering (tenured)

July 2008 – August 2010

Professor, Department of Mechanical Engineering (tenured)

August 2003 – June 2008

Associate Professor, Department of Mechanical Engineering

Teaching

ME 352- Introduction to Dynamic Systems

ME 423- Mechanical Vibrations

ME 722/ME 692- Smart Structures

ME 692- Control of Flexible Structures

ME 221- Dynamics of Mechanisms

ME 426- Mechanical Systems Lab

ME 683-Advanced Mech. Syst. Control

ME 673- Applied Engr. Analysis I

Research Activities

Advanced dynamic and control systems, vibrations, smart structures and materials, microwave energy transmission

Selected Publications (refereed journals; last 6 years)

Korde, U.A. and Fontaine, M.R., 'On achieving different optima for piezostucture performance with negative impedance converter loads', submitted, June 2010

Korde, UA, 'Large-displacement electrostatic actuation of membrane reflectors through mechanical control of electrode-membrane gap', *J. Intelligent Material Systems and Structures*, v. 21, January 2010, pp. 61-82

Korde, U.A., 'Large-displacement control of variable area electrostatic actuation for membrane reflectors', *J. Intelligent Material Systems and Structures*, v. 20, n. 6, 2009, pp. 697-721

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*, v. 19, n. 11, pp. 1339-1359

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

Selected Publications (refereed conferences; last 5 years)

- Robinson LK, Wickersham MA, Korde UA, 'Experiments on a twelve mode membrane mirror with boundary located electrostatic actuators', *51st SDM/18th AIAA/ASME/ASCE Adaptive Structures Conf.*, accepted for publication (2 others at this conference)
- Wickersham MA, Fehrman BC, Robinson LK, Downs AW, Korde UA, 'Electrostatically actuated membrane mirrors with mechanical control of electrode gap', *SPIE Astronomical Telescopes and Instrumentation Conf.*, accepted for publication
- Fontaine MR, Wickersham MA, Korde UA., 'Study of a tuned vibration absorber using piezoelectric patches with active shunt circuits', *17th SPIE Smart Structures and Materials Conf.*, to be presented, March 2010 (1 other at this conference)
- Barnes KA, Korde UA, Jenkins CH, Winter RM, 'On the use of acoustic excitation to accelerate self-healing in polymers', *2nd Int. Conf. on Self-Healing Materials*, Chicago, June 2009, presented (1 other at this conference)
- Robinson LK, Wickersham MA, Korde UA, 'Membrane mirrors with boundary located actuators', *50th SDM/AIAA/ASM/ASCE Adaptive Structures Conf.*, in review (2 others at this conference)
- Wickersham MA, Downs A, Korde UA, Hofacker ME, Kingsbury NA, 'Membrane Reflectors with Variable Area Electrostatic Actuation for Laser Beam Guidance', presented, *49th SDM/16th AIAA/ASME/ASCE Adaptive Structures Conf.*, Schaumburg, IL, 2008 (2 others at this conference)
- Korde UA, 'Studies on a submerged flexible sheet type wave energy device with distributed point-wise secondary power conversion', *Proc. 26th ASME Offshore Mechanics and Arctic Engineering (OMAE) Symp.*, June 2007
- Korde, U.A., Wickersham M.A., Farke, J.J., Hofacker, M.E., 'Electrostatically actuated small circular membrane reflectors for laser beam guidance', *14th AIAA Adaptive Structures Conf.*, April 2007; (one other at this conference).
- Korde, U.A., Petersen E.A., Daugaard, D, 'In-plane vibration of membrane strips and sheets with piezoelectric actuation and sensing', *SPIE Smart Structures/NDE Conf.*, March 2007; (2 others at this conference).
- Korde, U.A., Wickersham, M.A., Carr, S.G., Jenkins, C.H., 'Active control of material damping in piezoelectric membranes', *Proc. 13th AIAA Adaptive Structures Conf.*, May 2006 (2 others at this conference)
- Korde, U.A., Jenkins, C.H., 'Studies on small rectangular membranes with actuation along boundary', *Proc. SPIE Smart Structures/NDE Conf.*, San Diego, CA, Feb. 2006 (3 others at this conference)
- Korde, U.A., Langerman, M.A., Hainy, M.E., Zelfer, T.J., Sears, J.W., 'Active control of heat induced deformation in a laser powder deformation process', *Proc. 24th Int. Cong. Appl. Lasers and Electro- Optics (ICALEO)*, Laser Institute of America, Oct. 2005
- Korde, U.A., and Jenkins, C.H., 'Lightweight multifunctional actuation systems', *SPIE Smart Structures/NDE Conf.*, San Diego, CA, March 2005.
- Korde U.A., Langerman ML, Buck GA, Kalanovic VD (2004), 'Feedforward laser power specification for uniform cooling of thin-walled parts', *Proc. ASME- IMECE*, Anaheim, CA, Nov. 13-16, 2004.
- 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

Selected Research Contracts and Grants

- PI: "Subreflector Actuation for Reconfigurable Antennas", Army Research Laboratory (ARL), Materials and Manufacturing Sciences Division (\$86,250): **Current**
- PI: "Shielding on Sounding Rockets and Launch Vehicles", Air Force Research Laboratory (AFRL), Kirtland AFB, NM (\$353,000): **Current**
- PI: "Shielding Rocket Payloads in Transient Acoustic Loads", Air Force Research Laboratory (AFRL), Kirtland AFB, NM (\$305,000): **Current**
- PI: "Noise Shielding On Launch Vehicles", AFRL, Kirtland AFB, NM (\$255,000): **Current**
- PI: "Advanced Smart Structures", AFRL, Kirtland AFB, NM (\$329,000): **Current**
- PI: "Self-Repair of Space Structures", AFRL, Kirtland AFB, NM (\$150,000): **Current**
- PI: "Intelligent Passive Damping of Membrane Structures", AFRL, Kirtland AFB, NM (\$200,000): **Current**
- Co-PI: "Model Driven Feedforward Control of Laser Powder Deposition", Army Research Laboratory (\$275,000): **Current**
- Co-PI: "Instrumentation for Advanced Material Characterization", National Science Foundation, Major Research Instrumentation Grant (\$400,000): **Concluded**

- PI: “Advanced High Performance Micromachines”, NSF /EPSCoR-State of SD Grant (\$55,000): **Concluded**

Journal Editorships/Professional Committee Memberships

- Associate Editor: *Ocean Engineering*, international journal, (Elsevier)
- Editorial Advisory Board: *The Open Ocean Engineering Journal* (Bentham Open)
- Scientific Committee Member. Session Organizer, Session Chair: ASME Offshore Mechanics and Arctic Engineering: Renewable Energy Symp. (annual)
- Scientific Committee Member, Session Chair: SPIE Smart Structures and Integrated Systems Conf. (as needed)
- Member: ASME Technical Committee on Model Identification and Intelligent Systems
- Reviewer for: *Ocean Engineering*, *Simulation and Modeling Practice*, *IEEE Oceanic Engineering*, *Measurement Science and Technology*, *AIAA Journal*, *AIAA J. Spacecraft and Rockets*, *AIAA J. Aircraft*, *J. Nonlinear Systems*, *AIAA SDM Conference*, etc.

Service to University

- Biomedical Engineering MS/PhD Program Coordinator (July 2005-July 2007)
- Mechanical Engineering Transfer Student Advisor
- ME PhD Program Development

Collaborations

- External Collaborators (ongoing)
Dr. Chris Jenkins, Professor, Montana State Univ. Dr. Cengiz Ertekin, Professor, Univ. of Hawaii
- Selected Graduate Students Advised (as Major or Co-Major Professor)
Mr. Subhan Turlapaty (MSME; graduated, 2004)
Mr. Jacob Koester (MSME; graduated, 2005)
Mr. Jagadeesh Narayana (MSEE; graduated, 2005)
Dr. Awlad Hossain (PhD/MES; graduated, 2006)
Ms. Abiuda Reddy (MSME; graduated, 2007)
Mr. Miles A. Wickersham (MSME; in progress)
Mr. Michael Fontaine (MSME; in progress)
Mr. Tyler Engberg (MSME; in progress)
Mr. Jeffrey Comrie (MSME; in progress)
Mr. Brian C. Fehrman (PhD in ME: in progress)

Awards and Honors

Who’s Who among America’s Teachers 2002, 2004
Who’s Who in Engineering Education, 2004

Society Memberships

- American Society of Mechanical Engineers (ASME): Member
- American Institute for Aeronautics and Astronautics (AIAA): Member
- Society of Naval Architects and Marine Engineers (SNAME): Member
- American Geophysical Union (AGU): Member

2002 (Aug.) – 2003 (May)

St. Cloud State University, St. Cloud, MN
Associate Professor, Mechanical and Manufacturing Engineering Department

Courses Taught

Dynamics of Machinery [Advanced Dynamics (graduate course)], Machine Control and Robotics (Digital + Continuous Control, PLCs, Robot modeling and control), Engineering Design Graphics (Pro/E based), Computer-Aided Design (Pro/E, Pro/M; FE analysis basic theory), Engineering Mechanics (Statics)

Research Activities

Advanced Dynamics, Control Systems, Vibrations, Engineering Design, Automation; applications thereof in wave energy conversion, human fall dynamics, jet-propelled underwater vehicle control, etc.

Selected Publications (invited and/or refereed)

Korde, U.A., 'On controlled oscillating wave energy converters with submerged reaction mass', *Proc. ASME-Offshore Mech. And Arctic Engr. (OMAE) Conf.*, Cancun, Mexico, June 2003
Korde, U.A., 'Active control applications in wave energy conversion', *Sea Technology*, [invited article](#), July 2002
Korde, U.A., 'Dynamics of a floating buoy under latching control', *Proc. ASME- Offshore Mech. And Arctic Engr. (OMAE) Conf.*, Oslo, Norway, June 2002

Grants Received

College of Engineering and Science Research Grant: awarded October 2002

Professional Service

- Reviewer, Session Organizer for ASME-OMAE 2003 (Offshore Mechanics and Arctic Engineering) Conference (Ocean Engineering Track: Renewable Energy IB)
- Reviewer: Int. J. Engineering Education (Special issue on Manufacturing Engineering Education)

Honors Received

- Who's Who in America
- Invited observer to the Int. Ship and Offshore Structures Congress (ISSC)-2003

1999 (Jan.) – May 2002

Indiana Institute of Technology, Fort Wayne, IN.
Associate Professor and Chair, Mechanical Engineering Department.
Co-Director, Applied Research Center.

Courses Taught

Vibrations, Dynamics, Theory of Machines, Automation, Design for Manufacturing, Computer-Integrated Manufacturing, Engineering Design and Graphics, Senior Project Coordination and Advising, Advisor to mini-Baja, Robotics Challenge teams.

Research Activities

Vibrations, Dynamic Modeling and Control, Engineering Design, and Optimization applications in wave energy conversion.

Selected Publications (refereed journals and conferences)

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
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., Schoen, M.P., and Lin, F., 'Strategies for time-domain control of wave energy converters in irregular waves', *Proc. 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*, [invited paper](#), Sept. 2000

Administrative Duties

- Budget management, semester course scheduling, faculty course assignment, full-time and adjunct faculty hiring, program coordination and development, research funding management
- Successfully led the Mechanical Engineering program through an ABET focused visit
- Co-designer of college-wide outcomes assessment procedure
- Led department through preparations for ABET's next general visit

Principal Grant Activity

- National Science Foundation Japan Program; research funding from Japan Society for Promotion of Science: Principal Investigator (PI; funded)
- Consulting Grant from Japan Marine Science and Technology Center (JAMSTEC) (PI; funded)
- Ball Foundation Initiation Grant for Applied Research Center; Joint Project Director (Co-PI; funded)
- Proposal to State of Indiana: (wave-powered protection of underwater intakes from Zebra mussel growth in power plants on the coast of Lake Michigan) with University of Saint Francis, Ft. Wayne, IN; (PI, not funded)
- Proposal to NSF: Collaborative Research Proposal with University of Tokyo, Japan; included international research experience for 6 US undergraduates; (PI; not funded)

Honors/Awards Received

- Engineering Faculty of the Year 2000
- President's Grantsmanship Award, 2000
- Who's Who in Engineering Education
- Who's Who among America's Teachers

Other Scholarly Recognition/Activity

- Reviewer for J. Vibration and Control, Int. J. Offshore and Polar Engineering, Int. Conf. Offshore and Polar Engr., Marine Technology Society Journal

1997 (May) -1998 (Dec)

Japan Marine Science and Technology Center (JAMSTEC), Yokosuka, Japan
(Public Corporation).

Invited Research Fellow, Marine Technology Department.

Research Activities

Dynamic Modeling and Control, and Engineering Design applications in wave energy conversion.

Selected Publications (refereed journals and conferences, and report for NSF web site)

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., 'Active heave compensation in deep-water drilling and wave-energy conversion', *Proc. ASME Offshore Mechanics and Arctic Engineering Symp.(OMAE-98): Offshore Tech.*, Lisbon, Portugal, July 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., 'Ocean wave energy conversion projects in Japan', scientific report on NSF (US) and NSF (Tokyo) web sites

Courses Taught

- Co-advisor to 2 Master's students from Chalmers University of Technology, Sweden.
- Co-advisor to 1 Master's student from Univ. of Tokyo and 1 Ph.D. student from Nihon University, Japan.

Honors/Awards Received

- Who's Who in the World
- JAMSTEC Travel Award

Other Scholarly Recognition/Activity

- Reviewer for J. Fluid Mechanics, ASME Offshore Mechanics and Arctic Engineering Conference

1996 (May) -1997 (Apr.)

Independent Researcher, Memphis, TN.

Research Activities

Dynamic Modeling and Control, Engineering Design, Vibrations, and Marine Hydrodynamics applications in wave energy conversion and deep-water drilling.

Selected Publications (refereed journals)

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 II', *Applied Ocean Research*, v. 19, no. 1, pp. 13-20, 1997

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.

Principal Grants Received

- National Science Foundation, Japan Program: Principal Investigator
- Science and Technology Agency (Japan) Fellowship: Principal Investigator

1993 (Aug.) -1996 (May)

Christian Brothers University, Memphis, TN
Assistant Professor, Mechanical Engineering

Courses Taught

Engineering Design, Engineering Graphics, Senior Project Advising, Dynamics, Machine Kinematics, Robotics, Manufacturing Processes

Research Activities

Robotics, Engineering Graphics Education, Marine Hydrodynamics and Engineering Design applications in wave energy conversion.

Selected Publications

- 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
- 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 th ISATA Robotics, Vision, and Motion Conference*, Stuttgart, Germany, Sept. 1995.
- Korde, U.A., 'On the dynamics of a robotic MIG welding process', *Proc. 5 th RI/SME World Conference on Robotics Research*, Cambridge, MA, September 1994.
- Krupicka, G.L., McGinnis, R.E., Korde, U.A., 'Engineering Graphics at Christian Brothers University', *Proc. SE-ASEE Annual Meeting*, Greensboro, NC, April 1994.

Principal Grants:

- Integrated Manufacturing Laboratory, NSF ILI Program: Co-Project Director
- Society of Manufacturing Engineers Education Foundation Grant: Project Director
- Christian Brothers University Faculty Summer Research Grant: Principal Investigator

Awards and Other Accomplishments

- Japanese Government Research Award for Foreign Specialists, 1996
- Manufacturing Technologist Certification, Society of Manufacturing Engineers

1990 (Aug.) - 1993 (Jul.)

University of Notre Dame, Notre Dame, IN.
Research Assistant, Aerospace and Mechanical Engineering.

Research

Robotics, Kinetics, Kinematics, Control, Machine Vision, Estimation.

Selected Publications

1. Korde, U.A., *Camera-Space Manipulation Using Natural Visual Information*, Ph.D. thesis, University of Notre Dame, 1993; Advisor: Dr. S.B. Skaar
2. 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
3. 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.
4. Korde, U.A., Chen, W.Z., Skaar, S.B., 'Three-dimensional rigid-body positioning using camera-space control', *Proc. 29 th Annual Allerton conf. on Control, Decision, and Computing*, Allerton, IL, 1991, invited paper.

1989 (May) -1990 (Jul.)

Indian Institute of Technology, Madras, India.
Senior Project Officer, Ocean Engineering.

Research Activities

Dynamics and Control, and Engineering Design applications in wave energy conversion.

Selected Publications (refereed journals)

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

Other Accomplishments

Design, construction of a 3-m long "high-tech" wave tank with built-in wavemaker and wave energy absorber

1986 (Jan.) -1988 (Sept.)

University of Tokyo, Japan.
Ministry of Education (Japan) Graduate Research Fellow, Institute of Industrial Science.

Research Activities

Dynamics and Control, and Engineering Design applications in wave energy conversion.

Selected Publications:

- 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., Maeda, H., 'OWC type absorbing wavemaker', *Proc. Int. Conf. TECHNO-OCEAN*, Kobe, Japan, 1988.
- Korde, U.A., *Reactive Control of Oscillating Water Column Wave Energy Device*, Master's thesis, University of Tokyo, 1988; Advisor: Dr. Hisaaki Maeda.

Other Accomplishments

- Complete design and construction of sophisticated experimental models and mechanisms using lathes, mills, and other machines.
- Design, fabrication and testing of electronic circuits used in feedback control of mechanisms above.

1982 (Jul.) -1985 (Dec.)

Indian Institute of Technology, Madras, India.
Senior Scientific Officer, Ocean Engineering.

Research Activities

Engineering Design and Marine Hydrodynamics applications in wave energy conversion.

Selected Publication

- 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.

Grants and Accomplishments:

- Ministry of Education, Japan "Monbusho" fellowship.
- Design and construction of a 10-m long high-tech "narrow" wave tank.

1983 (Jul.) -1983 (Oct.)

Queen's University, Belfast, Northern Ireland and University of Edinburgh, Scotland.
British Council Fellow.

Research Activities

Engineering Design, Marine Hydrodynamics, Electronic Instrumentation.

Principal Publication

- Korde, U.A., 'Experimental study of linear dampers on J-tube oscillating water column', Research Report, Wave Power Group, Hydraulics Division, Civil Engineering, Queen's University of Belfast, 1983.

List of Publications

Refereed Publications

Peer-Reviewed Journals

Korde, U.A. and Fontaine, M.R., 'On achieving different optima for piezostructure performance with negative impedance converter loads', submitted, June 2010

Korde, UA, 'Large-displacement electrostatic actuation of membrane reflectors through mechanical control of electrode-membrane gap', *J. Intelligent Material Systems and Structures*, v. 21, January 2010, pp. 61-82

Korde, U.A., 'Large-displacement control of variable area electrostatic actuation for membrane reflectors', *J. Intelligent Material Systems and Structures*, v. 20, n. 6, 2009, pp. 697-721

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*, v. 19, n. 11, pp. 1339-1359

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, Fehrman BC, 'Experiments on a twelve mode membrane mirror with boundary located electrostatic actuators', *51st SDM/18th AIAA/ASME/ASCE Adaptive Structures Conf.*, accepted for publication

Fehrman B, Petersen EA, Barnes KA, Korde UA, 'Using focused acoustic excitation to accelerate crack healing', *51st SDM/18th AIAA/ASME/ASCE Adaptive Structures Conf.*, accepted for publication

Engberg T, Kizer J, Korde UA, 'Acoustic shielding of rocket payloads within launch fairings', *51st SDM/18th AIAA/ASME/ASCE Adaptive Structures Conf.*, accepted for publication

Wickersham MA, Fehrman BC, Robinson LK, Downs AW, Korde UA, 'Electrostatically actuated membrane mirrors with mechanical control of electrode gap', *SPIE Astronomical Telescopes and Instrumentation Conf.*, accepted for publication

Fontaine MR, Wickersham MA, Korde UA., 'Study of a tuned vibration absorber using piezoelectric patches with active shunt circuits', *17th SPIE Smart Structures and Materials Conf.*, to be presented, March 2010

Petersen EA, Fehrman B, Barnes, KA, Korde UA, 'Experiments on focusing and use of acoustic energy to enhance the rate of polymer healing', *17th SPIE Smart Structures and Materials Conf.*, to be presented

Barnes KA, Korde UA, Jenkins CH, Winter RM, 'On the use of acoustic excitation to accelerate self-healing in polymers', *2nd Int. Conf. on Self-Healing Materials*, Chicago, June 2009, presented

Sarrazin JC, Jenkins CH, Korde UA, Rutherford SA, 'Ultrasonic self healing', *2nd Int. Conf. on Self-Healing Materials*, Chicago, June 2009, presented

Robinson LK, Wickersham MA, Korde UA, 'Membrane mirrors with boundary located actuators', *50th SDM/17th 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', *16th SPIE Smart Structures and Materials Conf.*, in review

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