


## Requests for Collaboration

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<p><b>Research Interests</b></p>	
<ul style="list-style-type: none"> <li>● Control devices using magnetorheological fluids</li> <li>● Controlling hydraulic actuators</li> </ul>	
<p><b>Creative Achievements in The Application of New and Existing Science and Technology</b></p>	
<p>(1) Magnetorheological fluids (MR Fluids) are suspensions which consist of soft magnetic particles and base liquid. By applying magnetic field, the particles make chain-like structure and rheological properties of the MR fluids show remarkable change. This characteristic is suitable for constructing control devices like hydraulic actuators, variable hydraulic dampers and so on. We develop a coaxial type MR fluid valve for hydraulic actuators and research control methods the valve. And we also develop damping elements for variable hydraulic dampers and research their damping properties.</p> <p>(2) Piezoelectric ceramics are one of actuating materials. By applying electric voltage, the piezoelectric ceramics are easily driven. We also are researching applications of the piezoelectric ceramics.</p>	
<p><b>Technology (Product, Process, Device, Service etc.) That I Want to Request for Collaboration</b></p>	
<ul style="list-style-type: none"> <li>● Hydraulic actuators</li> <li>● Variable hydraulic dampers</li> <li>● Piezoelectric actuators</li> </ul>	
<p><b>A List of 5 Key Publications</b></p>	
<ul style="list-style-type: none"> <li>• Constructing of cure monitoring system with piezoelectric ceramics for composite laminate  <u>N. OSHIMA</u>, K. INOUE, S. MOTOGI, T. FUKUDA, Proc. of SPIE 5056 41 - 48 (2003).</li> <li>• Cure monitoring of composite laminate by piezoelectric ceramics having different dimensions  <u>N. OSHIMA</u>, K. INOUE, T. HARA, S. MOTOGI, T. FUKUDA,, Proc. of Inter. Conf. of Adv. Tech. in Exp. Mech. 2003 CD-ROM (2003)</li> <li>• Tuned Sloshing Damper Using Electrorheological Fluid, D. Sakamoto, <u>N. Oshima</u>, T. Fukuda, Smart Materials and Structure 10 963 – 969 ( 2001)</li> <li>• Cure Monitoring of Fiber Reinforced Plastics by Piezoelectric Cermaics, <u>N. Oshima</u>, Aoki K., Motogi S. and Fukuda T., MSRI Special Technical Publication 2 89 – 94 ( 2001)</li> <li>• Study of Vibartion Modal Estimation for Composite Beam with PZT Thin Film Sensor System  <u>N. Oshima</u>, T. Fukuda and S. Motogi, Proc. Twelveth International Conference on Composite Materials CDROM (1999)</li> </ul>	