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EDUCATIONAL BACKGROUND

<i>Ph.D. in Mechanical Engineering</i> , University of Wisconsin, Madison, 1997	1992-1997
<i>Master of Science in Engineering</i> University of Michigan, Ann Arbor, Michigan, 1992 Concentration in Mechanical Engineering.	1991-1992
<i>Bachelor of Science in Engineering</i> Calvin College, Grand Rapids, Michigan, 1990 Concentration in Mechanical Engineering.	1986-1990

APPOINTMENTS

<i>Professor, Agricultural and Biological Engineering, Purdue University, West Lafayette, Indiana.</i> Research in agricultural mechanization, digital hydraulics, and control systems. Advise the ASABE ¼ Scale Tractor Design and Practical Utility Platform (PUP) teams, and teach courses in design, hydraulics, off-highway vehicles, electronics, and control systems.	2017-present
<i>Associate Professor, Agricultural and Biological Engineering, Purdue University</i>	2010-2017
<i>Associate Director, Global Engineering Program, Purdue University.</i> Represent the College of Engineering in the development of new international partnerships and programs. Current programs in Cameroon, Kenya, and Uganda focused on renewable energy, biofuels, practical utility platforms, agricultural mechanization, and access to clean water.	2012-2016
<i>Assistant Professor, Agricultural and Biological Engineering, Purdue University</i>	2004-2010
<i>Associate Professor, Mechanical Engineering, MSOE, Milwaukee, Wisconsin.</i> Primary courses include Automatic Control Systems I and II, Robotics, Computer Applications, Aero Design, Vehicle Dynamics, Vehicle Design, Electrohydraulics, Introduction to Engineering, and Fluid Power. Additional experience includes advising senior design projects and Master’s students’ projects.	2000-2004
<i>Assistant Professor, Mechanical Engineering, MSOE, Milwaukee, Wisconsin.</i>	1997-2000

RESEARCH

<i>Purdue Utility Project.</i> Research focused on improving food security and economic opportunities through improved agricultural mechanization, transportation, and energy.	2009-present
<i>Purdue Fluid Power Research Lab.</i> Active research in fluid power systems and components, multi-physics coupled dynamics system modeling, advanced control algorithms, electrohydraulics, hybrid vehicles, drive-by-wire technologies, and hydrostatic transmissions. NSF and industry supported since 2004.	2004-present
<i>MSOE Applied Technology Center.</i> Projects in advanced control algorithms applied to robotics, vehicles, engines, and medical equipment, hybrid vehicles and emissions reduction, non-linear modeling of dynamic systems, fuzzy logic control of electrohydraulic systems, and electromagnetic actuators (camless engine and position control applications).	1997-2004

INTERNATIONAL

Villavicencio, Columbia—Farmer to Farmer workshop at the Universidad De Los Llanos	2017
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(set up mechanization lab, taught design and modeling classes, built a PUP). August 1-10.	
Tanzania and South Africa—Land O’Lakes Global Food Challenge Faculty Advisor	2017
Ethiopia—Mandela Washington Fellow Reciprocal Exchange Program, March.	2017
Kenya and Rwanda—Land O’Lakes Global Food Challenge Faculty Advisor	2016
Guinea, Faranah—Capacity building workshop at Institut Supérieur Agronomique Veterinaire de Faranah (ISAV/F) Workshop title: ToT Appropriate Technologies Lab (set up mechanization lab, taught design and modeling classes, built a PUP). February 14-28.	2016
Guinea, Faranah—Capacity building workshop at Institut Supérieur Agronomique Veterinaire de Faranah (ISAV/F) Workshop title: Appropriate Technologies and Innovations to Market. August 29-September 14.	2015
Bill and Melinda Gates Foundation Grand Challenges, Beijing—Invited to participate in the Agricultural Mechanization workshop (UN-FAO, China, Nigeria, Tanzania).	2015
UN FAO Rome—Invited to participate in the Committee on World Food Security (CFS) based on work through the Purdue Utility Project, October 11-17, 2015	2015
South Africa, Malawi, Zambia, Botswana—Land O’Lakes Global Food Challenge Faculty Advisor	2014-2015
Tanzania (Nelson Mandela African Institute of Science and Technology, Arusha), graduate student Michael Sheehan spent a semester at NMAIST and completed his thesis on the design of a constructed wetland water filtration demonstration site at the university.	2014
Kenya (UN-Habitat, Nairobi), graduate student Chris Limiac spent a semester at UN-Habitat and completed his thesis on the development of an anaerobic digester model.	2014
Kenya/Tanzania, ABE capstone team, watershed modeling for Endallah, Tanzania	2013
Brazil (Pirassununga and Vicosá)—Initiated a new 6-credit summer exchange program with USP-Pirassununga and Federal Univ. of Vicosá.	2012-present
Cameroon (African Center for Renewable Energy and Sustainable Technology—ACREST). Organize and advise student design teams focused on renewable energy, food and water, and affordable transportation. Student teams have traveled every year since 2009.	2009-present
China Maymester Course (Beijing, Xian, Lhasa, Chongqing, Wuhan, Shanghai).	2008, 2010

INDUSTRIAL EXPERIENCE

<i>Kelsey-Hayes, Romulus, Michigan.</i> Designed and supervised completion of a dynamic vehicle simulator using closed loop control to simulate anti-lock braking stops in the research department. Developed the hardware components and software algorithms for hardware-in-the-loop testing and development.	1992
<i>SUSPA Inc., Grand Rapids, Michigan.</i> Machine Design, Computer programming, and CAD. Set up data acquisition systems for equipment in the testing department.	1990-1991

PROFESSIONAL SOCIETY INVOLVEMENT

<i>Registered Professional Engineer, State of Wisconsin</i>	1999-present
<i>Faculty Advisor, Purdue ASABE Chapter, American Society of Agricultural and Biological Engineers.</i> Advisor for the ¼ Scale Student Design team.	2004-present
<i>Faculty Advisor, MSOE Chapter, Society of Automotive Engineers (SAE).</i> Had active role in meetings, promoting student memberships, guiding student leaders, and administrative	1998-2004

duties with the national branch. Campus chapter exceeded 100 members in 2001-2002.	
<i>Board of Directors, Position of Vice Chair of Student Activities, Milwaukee Section of SAE.</i>	2003-2004
Represent area universities and student members to foster relationships between current engineering students, practicing engineers, and SAE industry related activities.	
<i>SAE Aero Advisor.</i> Advise team of seniors to design and build a RC cargo plane to compete in the SAE Aero Design Competition. Students design the plane, perform wind tunnel and stress analyses, and build the plane during their senior year. MSOE won the Open Class of the national competition 4 of the last 7 years, finishing 2 nd the other three.	1999-2004
<i>SAE Formula Car Advisor.</i> Advise team of seniors to design, build, and compete a mini-formula style car. Fulfills partial requirements for the students senior design projects. MSOE has regularly finished in the top 1/3 of schools competing.	1998-2004
<i>Society of Automotive Engineers (SAE).</i>	1991-present
<i>American Institute of Aeronautics and Astronautics (AIAA).</i>	2001-2004
<i>American Society of Engineering Education (ASEE).</i>	1997-2004
<i>American Society of Mechanical Engineering (ASME)</i>	1995-2004

PURDUE COMMITTEES

<i>Travel Continuous Improvement and Support Team</i>	2016-present
<i>Purdue College of Agriculture Scholarship of Teaching and Learning P&T Review Committee</i>	2016-present
<i>Purdue Service Learning Working Group (CIE)</i>	2015-2016
<i>Purdue College of Agriculture Curriculum and Student Relations Committee (CSRC)</i>	2016
<i>Purdue College of Engineering Engagement Committee</i>	2015-present
<i>Purdue Global Engineering Programs Committee</i>	2014-present
<i>Executive Committee of the Discovery Park Center for Global Food Security</i>	2013-present
<i>Purdue First Year Engineering Curriculum Committee.</i> Committee evaluates and assesses the common curriculum for all first year Purdue engineering students.	2008-2015
<i>Purdue Professional Practice Advisory Committee</i>	2006-present
<i>Purdue College of Engineering Grade Appeals Committee</i>	2011-2013
<i>ABET Committee.</i> ABE committee responsible for implementing assessment techniques to continuously improve the curriculum and the quality of the student learning environment.	2005-present
<i>ABE Academic Advisor.</i> Advise ABE Machine Systems undergraduate students. This involves meeting individually each semester to evaluate progress, choose electives, mentor regarding activities, internships, etc., and develop a relationship with the student.	2004-present
<i>ABE Academic Programs Committee.</i> ABE committee dealing with curriculum, advising,	2004-

and transfer credit related issues.	present
<i>ABE Professional Placement Faculty Coordinator:</i> Help students from ABE who are interested in cooperative employment, interact with companies who already hire or are interesting in hiring Co-Op students, and work with the campus office.	2006-present
<i>Purdue Faculty Search Committees.</i> Served on 11 committees for Engineering, Agriculture, and Liberal Arts	

EXTERNAL COMMITTEES

<i>Chair of the CCEFP Education Outreach Committee.</i> This committee organizes and facilitates the educational outreach activities for the NSF Engineering Research Center for Compact and Efficient Fluid Power.	2007-2010
<i>Chair of SAE Fluid Power Committee.</i> This committee organizes the fluid power technical program at the annual SAE Commercial Vehicle Congress and Exposition.	2005-2010
<i>Society of Automotive Engineers (SAE) Aero Design Rules Committee.</i> Member of the rules committee for the Aero Design Student competitions. Provide guidance and input into the rules and organization of the East and West competitions.	2003-present
<i>SAE Aerospace Program Office (APO) Committee.</i> The committee met annually at the SAE Aerospace Congress and Exhibition (ACE) to provide strategic input and direction to the Aerospace Vice President and Board of Directors. Personally asked to fill a new position on the committee and provide an academia viewpoint in addition to the government and industry representation already present.	2003-2006

AWARDS

<i>Purdue College of Engineering Faculty Awards of Excellence—Undergraduate Advising</i>	2018
<i>Purdue Research Refresh Award</i>	2016-2017
<i>American Society of Agricultural & Biological Engineering (ASABE) Kishida International Award</i>	2016
<i>Purdue Entrepreneurial Leadership Academy Scholar:</i> an award program for Purdue faculty with entrepreneurial interests. Two faculty members from the previous year are selected to serve as the Entrepreneurial Leadership Academy Scholars.	2013-2014
<i>Purdue Seed for Success Research Award.</i> Awarded to PIs and co-PIs for grant awards of \$1 million or more. Also received the <i>bronze acorn award</i> (for 1 st time awardees)	2013
<i>Purdue Entrepreneurial Leadership Academy Fellow:</i> an award program for Purdue faculty with entrepreneurial interests. Ten faculty members are competitively selected each year to participate in the Entrepreneurial Leadership Academy.	2012-2013
<i>Purdue Global Engineering Impact Award:</i> The award recognizes: Commitment to providing global learning opportunities for Purdue College of Engineering students, Leadership in the development of partnerships and programs with global impact, and Demonstration of campus-wide, national and global engagement.	2012
<i>The Charles B. Murphy Outstanding Undergraduate Teaching Award:</i> given annually in recognition of outstanding teaching in all phases of undergraduate instruction; the university's highest undergraduate teaching honor	2011
<i>Community of Service Learning Faculty Fellows:</i> based on demonstrated experience with service-learning courses and potential for providing leadership and stewardship for service-learning to the campus	2011

<i>Purdue College of Agriculture David C. Pfendler Outstanding Counselor Award:</i> Awarded annually to a single advisor for their contributions to mentoring undergraduate students and commitment to their success.	2010
<i>ABE Department Outstanding Counselor:</i> Awarded annually to an outstanding counselor and academic advisor in the Agricultural and Biological Engineering Department.	2010-2011 2009-2010
<i>Purdue Teaching Academy:</i> Inducted into the Purdue Teaching Academy	2009
<i>ASABE Superior Paper Award:</i> ASABE presents superior paper awards to the top 2.5% of the papers published each year (Lumkes and van Doorn, 2008)	2009
<i>ASABE Outstanding Reviewer Award</i>	2009
<i>ABE Outstanding Department Teacher - Engineering:</i> Awarded annually to an outstanding educator in the Agricultural and Biological Engineering Department at Purdue University.	2007-2008
<i>Purdue Teaching for Tomorrow Award:</i> Awarded for demonstrated abilities in teaching. Program pairs senior faculty with junior faculty to work together to enhance the learning environment on campus.	2006-2007
<i>SAE Faculty Advisor Award:</i> Awarded annually from SAE recognize outstanding faculty advisors at SAE Collegiate Branches.	2005
<i>SAE Ralph R. Teetor Educational Award:</i> Awarded for excellence in engineering education, it is based on contributions to teaching and curriculum development, contributions to research, publications, leadership in student activities, and professional development activities. The award is international in scope and included attendance at the 2003 SAE World Congress and Exposition, visits to industrial and research facilities, and an awards luncheon.	2002-2003
<i>Falk Engineering Educator Award:</i> Awarded annually to one educator at MSOE for: <ul style="list-style-type: none"> • Undergraduate Teaching Excellence and Dedication. • Leadership in the College, Professional, and Local Communities. The honoree is selected based on nominations from students and faculty at MSOE.	2002
<i>Rockwell Automation Global Development Program:</i> Czech Technical University, Prague.	2001
<i>Bere Memorial Award:</i> Annually awarded to one senior student at Calvin College for demonstrating outstanding leadership, character, scholastic, and athletic activities.	1990

OTHER ACTIVITIES AND HONORS

MSOE Head Cross-Country and Track Coach. Founded the new Track and Field Varsity Program. Lake Michigan Conference Cross-Country Coach of the Year (2000, 2001).	1999- 2002
Semi-finalist in 1996 United States Track and Field Olympic Trials. Sponsored by Nike and ranked in the top 20 of the U.S. during 1994, 1995 and 1996 (3000m steeplechase).	1994-1996
NCAA III Track and Field All-American Honors (1989, National Champion 1990).	1989-1990
Captain of the Calvin College cross-country and track teams, three years (1987-1990).	1987-1990
Licensed Private Pilot; Experimental Aircraft Association (EAA)	2008- present
Extra class amateur radio license (AA9QP).	1995- present

BOOKS AUTHORED

Lumkes, J., *Control Strategies for Dynamic Systems, Design and Implementation*, Marcel-Dekker Inc., 616 pages, 2002, ISBN: 0—8247—0661—7.

PATENTS

Batdorff, M., and Lumkes, J. *Fast-Acting Fluid Control Valve*. U.S. Patent 7,717,130, filed May 17, 2007, and issued May 18, 2010.

Andruch, III, John and Lumkes, JR., John H. *Regenerative Hydraulic Systems and Methods of Use*. U.S. Patent 9,194,107, filed September 29, 2010 and issued November 24, 2015.

Lumkes, John H.; Batdorff, Mark Allen; Merrill, Kyle Joseph; Holland, Michael Andrew; Wilfong, Gabriel Jordan. *Fluid Control Valve Systems, Fluid Systems Equipped Therewith, and Methods of Using*. U.S. Patent 9,200,648, filed January 24, 2012 and issued December 1, 2015.

Lumkes, John H.; Helmus, Tyler S., Breidi, Farid Youssef El. *Direct Actuated Valve Control Hydraulic Pump/Motor*. Docket 67308-01. Provisional application filed 2015-10-15.

REFEREED JOURNAL PUBLICATIONS

1. Sosnowski, T., Lucier, P., Lumkes, J., Fronczak, F., and Beachley, N. (1998). Pump/motor displacement control using high-speed on/off valves. *SAE Transactions, Journal of Commercial Vehicles*, 107(2): 153-161 (also SAE Technical Paper 981968).
2. Brauer, J., and Lumkes, J. (2002). Coupled model of a magnetically-actuated valve controlling a hydraulic cylinder and load. *IEEE Transactions on Magnetics*, 38(2):917-920.
3. Branson, D., Lumkes, J., Wattananithiporn, K., and Fronczak, F. (2008). Simulated and experimental results for a hydraulic actuator controlled by two high-speed on/off solenoid valves. *International Journal of Fluid Power*, 9(2) pp. 47-56.
4. Lumkes, J. and van Doorn IV, W. (2008). Design and testing of a dual path front hydrostatic drive-by-wire off road vehicle. *Transactions of the ASABE*, 51(4): 1165-1175.
5. Harmeyer, K., Holland, M., Gallien, T., Lumkes, J., and Krutz, G. (2009). Embedded sensors in Rubber and other polymer components. *Strain (International Journal for Experimental Mechanics)*, doi: 10.1111/j.1475-1305.2007.00336.x.
6. McKinley, C. and Lumkes, J. (2009). Quantitative evaluation of an on-highway trucking fleet to compare #2ULSD and B20 Fuels and their impact on overall fleet. *Applied Engineering in Agriculture*, Vol. 25(3): 335-346.
7. Batdorff, M., and Lumkes, J. (2009). High fidelity magnetic equivalent circuit in an axisymmetric electromagnetic actuator. *IEEE Transactions on Magnetics*, 45(8):3064-3072.
8. Lumkes, J., Batdorff, M., and Mahrenholz, J. (2009). Characterization of losses in virtually variable displacement pumps. *International Journal of Fluid Power*, 10(3) pp. 17-27.
9. Mahrenholz, J. and Lumkes, J., (2010). Coupled Dynamic Model for a High Speed Pressure Balanced 3-way On/Off Hydraulic Valve. *J. Dyn. Sys., Meas., Control*, 132, 10p.
10. Long, G. and Lumkes, J. (2010). Comparison of using 2/2 and 3/2 high speed on/off valves and different control strategies for cylinder position control. *International Journal of Fluid Power*, (2010) No. 1 pp 21-32.
11. Lumkes, J. (2010). Survey of Three Different Methods of Delivering Engineering Content in Lectures. *J. Educational Technology Systems*, 38(3):349-366.
12. Merrill, K., Holland, M., Batdorff, M., and Lumkes, J. 2010. Comparative Study of Digital Hydraulics and Digital Electronics. *International Journal of Fluid Power*, 11(3) pp. 45-51.
13. Garcia, J., Lumkes, J., Heckaman, B., and Martini, A. 2011. Viscosity Dependence of Static Friction in Lubricated Metallic Line Contacts, *Tribology Transactions*, 54: 3, 333 — 340. DOI:10.1080/10402004.2010.542278.

14. Liu, Y., Tang, D., and Lumkes, J. 2012. Efficiency of pumping gasoline in service station. *IOP Conf. Ser.: Earth Environ. Sci.* 15 072007.
15. Lumkes, J., Hallett, S., and Vallade, L. 2012. Hearing versus experiencing: The impact of a short-term study abroad experience in China on students perceptions regarding globalization and cultural awareness. *International Journal of Intercultural Relations*, 36(1), 151-159.
<http://dx.doi.org/10.1016/j.ijintrel.2011.12.004>
16. Yajun, L., Dian, T., Jun, L., and Lumkes, J., 2012. Wear behaviour of piston seals in flow meter of fuel dispenser under different pressure conditions, *Flow Measurement and Instrumentation*, Volume 28, December 2012, Pages 45-49, ISSN 0955-5986, 10.1016/j.flowmeasinst.2012.07.005.
17. Seay, J. and Lumkes, J. 2014. Multi-University Partnership for Global Service Learning in Sub-Saharan Africa. *International Journal for Service Learning in Engineering*, pp. 367–380, Fall 2014, ISSN 1555-9033.
18. Xiong, S. and Lumkes, J. 2014. Coupled Physics Modelling for Bi-Directional Check Valve System, *International Journal of Fluid Power*, 15:2, 55-67, DOI:10.1080/14399776.2014.897500.
19. Wilson, D. and Lumkes, J. 2015. Design of a multipurpose agricultural vehicle and attachments for developing countries. *Agricultural Engineering International: CIGR Journal*. pp. 141-148.
20. Wilson, D. and Lumkes, J. 2015. Manufacturing Agricultural Utility Vehicles in Sub-Saharan Africa. *Agricultural Engineering International: CIGR Journal*. pp. 149-159.
21. Erk, K., Lumkes, J., Shambach, J., Braile, L., Brickler, A., & Matthys, A. (2015). Designing a sound-reducing wall. *Science and Children*, 53(1), 52-59.
22. Breidi, F., Helmus, T., and Lumkes, J. 2015. The Impact of Peak-And-Hold and Reverse Current Solenoid Driving Strategies on the Dynamic Performance of Commercial Cartridge Valves in a Digital Pump/Motor. *International Journal of Fluid Power*,
<http://dx.doi.org/10.1080/14399776.2015.1120138>
23. Breidi, F., Garrity, J., and Lumkes, J. 2017. Design and Testing of Novel Hydraulic Pump/Motors to Improve the Efficiency of Agricultural Equipment. *Transactions of the ASABE*, accepted for publication 15-Aug-2017.

REFEREED CONFERENCE AND SYMPOSIUM PUBLICATIONS

1. Babbitt, G., Lumkes, J., Lucier, P., Fronczak, F., and Beachley, N. (1994, September). *Regenerative Testing of Hydraulic Pump/Motor Systems*. Paper presented at the SAE International Off-Highway and Powerplant Congress and Exposition, Milwaukee, WI. SAE Technical Paper 941750.
2. Lumkes, J., Hartzell, T., Fronczak, F., and Beachley, N. (1995). Investigation of the dynamics of switching from pump to motor using external valving. *1995 IMECE Proceedings of the ASME Dynamic Systems and Control Division*, DSC-vol57-2, p805-812.
3. Brauer, J., Lumkes, J. and Slater, J. (2000, June). *Coupled electromagnetic and hydraulic devices modeled by finite elements and circuits*. Paper presented at the Ninth Biennial IEEE Conference on Electromagnetic Field Computation (CEFC), Milwaukee, Wisconsin.
4. Lumkes, J., and Fronczak, F. (2000). Design, simulation, and validation of a bond graph model and controller to switch between pump and motor operation using four on/off valves with a hydraulic axial piston pump/motor. *Proceedings of the 2000 American Control Conference*, v5, 2000, p 3605-3609.
5. Ficken, J., Labus, T., and Lumkes, J. (2000). Electrohydraulics in the undergraduate curriculum. *Proceedings of the 2000 American Control Conference*, v5, 2000, p3610-3614.
6. Brauer, J., and Lumkes, J. (2000). Electrohydraulic systems simulations containing electromagnetic finite element models of magnetic actuators. In *Topics in hydraulics, Special publication SP-1554*, SAE Technical Paper 2000-01-2633.
7. Brauer, J., and Lumkes, J. (2001, July). *Coupled model of a magnetically-actuated valve controlling a hydraulic cylinder and load*. Presented at the 13th Conference on the Computation of Electromagnetic Fields (COMPUMAG '01), Evian, France.

8. Brauer, J., Lumkes, J., and Lin, D. (2002, March). *Modelling an electronically-controlled magnetic actuator operating a hydraulic valve and cylinder*. Paper presented at SAE International Off-Highway and Powerplant Congress and Exposition, Las Vegas, NV. SAE Technical Paper 2002-01-1346.
9. Lumkes, J., and Cesareo, V. (2002). The use of composites in radio-controlled cargo airplanes designed for student sae aero design competitions. *Proceedings of the American Society for Composites 17th Technical Conference*. 9 pg.
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13. Lumkes, J., van Doorn, W., and Donaldson, J. (2005). The design and simulation of a high force low power actuation system for camless engines. *ASME Conf. Proc. 2005*, p 553-561, DOI:10.1115/IMECE2005-81808.
14. Holland, M., Harmeyer, K., and Lumkes, J. (2006). Electrically controlled fixed-displacement pump, variable-displacement motor hydrostatic transmission. In *Fluid Power for Mobile, In-Plant, Field and Manufacturing, Special publication SP-2054*, SAE Technical Paper 2006-01-3469.
15. Batdorff, M., and Lumkes, J. (2006). Virtually variable displacement hydraulic pump including compressibility and switching losses. *ASME Conf. Proc. 2006*, p 57-66 , DOI:10.1115/IMECE2006-14838.
16. van Doorn, W. and Lumkes, J. (2006). Directional stability enhancement of a dual path front hydrostatic drive by wire off-road vehicle. *ASME Conf. Proc. 2006*, p 195-202, DOI:10.1115/IMECE2006-14647.
17. Lumkes, J. (2006). The integration of student design competitions and academic curricula. *ASME Conf. Proc. 2006*, p 293-299, DOI:10.1115/IMECE2006-15127.
18. Garcia, J., Krutz, G., and Lumkes, J. (2007) Self-propelled water hydraulic vehicle. *Proceedings of the 10th Scandinavian International Conference on Fluid Power (SICFP '07)*, Tampere, Finland. 13pg.
19. Andruch, J. and Lumkes, J. (2008). A hydraulic system topography with integrated energy recovery and reconfigurable flow paths using high speed valves. *Proceedings of the 51st National Conference on Fluid Power (NCFP I08-24.1)*, p 649-657.
20. McKinley, C. and Lumkes, J. (2008). Using computational fluid dynamics (cfd) to simulate a cylinder head flow test. *Proceedings of the 51st National Conference on Fluid Power (NCFP I08-8.3)*, p 247-252.
21. Andruch, J. and Lumkes, J. (2009). *Regenerative hydraulic topographies using high speed valves*. SAE Commercial Vehicle Engineering Congress & Exhibition, October 2009, SAE Paper 2009-01-2846.
22. Holland, M., Harmeyer, K. and Lumkes, J. (2009). *Design of a High-Bandwidth, Low-Cost Hydrostatic Absorption Dynamometer with Electronic Load Control*. SAE Commercial Vehicle Engineering Congress & Exhibition, October 2009, SAE Paper 2009-01-2846.
23. Merrill, K., Holland, M. and Lumkes, J. (2010). Efficiency Analysis of a Digital Pump Motor as Compared to a Valve Plate Design. *Proceedings of the 7th International Fluid Power Conference (7.IFK)*, Aachen, Germany, March 22-24.
24. Garcia, J. M., Martini, A., and Lumkes, J. H. (2010). Experimental Measurements of Static Friction for Line Contacts at High Speed Step Inputs, *Proc. of 6th FPNI-PhD Symp.* 15-19 June, West Lafayette, IN.
25. Holland, M. and Lumkes, J. (2010). Test Stand Development for Investigating Digital Pump/Motor Operating Strategies. *Proc. of 6th FPNI-PhD Symp.* West Lafayette 2010, pp.303-314.

26. Merrill, K. and Lumkes, J. (2010). Operating Strategies and Valve Requirements for Digital Pump/Motors. *Proc. of 6th FPNI-PhD Symp.* West Lafayette 2010, pp. 249-258.
27. Wilfong, G., Batdorff, M. and Lumkes, J. (2010). Design and Dynamic Analysis of High Speed on/off Poppet Valves for Digital Pump/Motors. *Proc. of 6th FPNI-PhD Symp.* West Lafayette 2010, pp. 259-269.
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31. Wilfong, G. J., Holland, M. A., and Lumkes, J. H. (2011). Design and analysis of pilot operated high speed on/off valves for digital pump/motors. *Proceedings of the 52nd National Conference on Fluid Power, Las Vegas*, pp 539-543.
32. Lumkes, J. and Andruch, J. 2011. Hydraulic Circuit for Reconfigurable and Efficient Fluid Power Systems, *Proceedings of the 12th Scandinavian International Conference on Fluid Power, SICFP (1096):16pg.*
33. Lumkes, J. 2012. Design of a Sustainable, Locally Manufacturable, Agricultural Utility Vehicle for Developing Countries. *International Conference Of Agricultural Engineering, Cigr- Ageng 2012, Valencia 8-12 July 2012, Book Proceeding ISBN 978-84-615-9928-8.*
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35. Liu, Y., Wang, Z., Huang, Z., and Lumkes, J. 2013. New Designs in Fuel Dispensing System to Reduce Water Hammer. ASME/Bath Symposium on Fluid Power and Motion Control, Sarasota, FL., FPMC2013-4415.
36. Merrill, K., Breidi, F., and Lumkes, J. 2013. Simulation Based Design and Optimization of Digital Pump/Motors, ASME/Bath Symposium on Fluid Power and Motion Control, Sarasota, FL., FPMC2013-4475.
37. Skelton, D., Xiong, S., Breidi, F. and Lumkes, J. (2013) *High Performance Actuation Systems Enabled by Energy Coupling Mechanisms*. SAE Commercial Vehicle Engineering Congress & Exhibition, October 2013, SAE Paper 2013-01-2344.
38. Skelton, D., Xiong, S., and Lumkes, J. (2014). Design of High Performance Actuation System for High Speed Valves. *Proceedings of the 9th International Fluid Power Conference (9.IFK)*, Aachen, Germany, March 24-26.
39. Garcia, J., Kuleshov, Y., and Lumkes, J. (2014). Using fluid power workshops to increase STEM interest in K-12 students. *Proceedings of the 2014 American Society for Engineering Education Annual Conference and Exposition*. June 15-18.
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