



## The 7th Workshop on Digital Fluid Power

26-27 February 2015

University of Linz / LCM, Linz, Austria

### Final Program

**Thursday, 26 February 2015**

Science Park 3, Intel Mobile Communications Hall (HS 19)

08:00 – 09:00	<b>Registration</b>
09:00 - 09:30	<b>Opening Ceremony</b> <i>Chairman: K. Huthala</i>
09:30 - 09:40	<b>Break</b>
09:40 - 11:15	<b>Session 1: Digital Fluid Power</b> <i>Chairman: M. Linjama</i>
09:40 - 10:00	<b>Digital Fluid Power in the 7th Year of DFP Workshops</b> R. Scheidl, B. Winkler and A. Plöckinger
10:00 - 10:25	<b>STEAM – The Best of Both Worlds</b> R. Leifeld, M. Vukovic and H. Murrenhoff
10:25 - 10:50	<b>Digital Secondary Control Architecture for Aircraft Application</b> H. C. Belan, C. C. Locateli, B. Lantto, P. Krus and V. J. De Negri
10:50 - 11:15	<b>Ferromagnetic Shape-Memory Alloy (FSMA) Pneumatic On/Off Valve</b> T. Ferreira, S. Sesmat, F. Sixdenier, R. Vandamme and E. Bideaux
11:15 - 11:45	<b>Coffee Break</b>
11:45 - 13:00	<b>Session 2: Switched Systems</b> <i>Chairman: T. Andersen</i>
11:45 - 12:10	<b>Avoidance of Transmission Line Pressure Oscillations in Discrete Hydraulic Systems – By Shaping of Valve Opening Characteristics</b> A. H. Hansen, H. C. Pedersen and M. M. Bech
12:10 - 12:35	<b>Theoretical Studies of a Switched Inertance Hydraulic System in a Four-Port Valve Configuration</b> N. Johnston, M. Pan, A. Plummer, A. Hillis, H. Yang
12:35 - 13:00	<b>Summary of the Identification of Hydraulic Drive System with Digital Control Actuator</b> I. Angelov and A. Mitov
13:00 - 14:00	<b>Lunch in JKU Mensa</b>
14:00 - 15:40	<b>Session 3: Control</b> <i>Chairman: J. Reuter</i>
14:00 - 14:25	<b>Some Aspects of Modelling, Dimensioning, and Control of Digital Flow Control Units</b> C. Stauch, J. Rudolph and F. Schulz
14:25 - 14:50	<b>Characteristics of Digital Hydraulics with Commercial Controllers</b> M. Huova, M. Ahopelto, M. Ketonen, V. Ahola, M. Linjama and K. Huhtala
14:50 - 15:15	<b>Optimal Feedforward Control of a Digital Hydraulic Drive</b> R. Haas and E. Lukachev

15:15 - 15:40	<b>Delta-Sigma Modulated Displacement of a Digital Fluid Power Pump</b> P. Johansen, D. B. Roemer, T. O. Andersen and H. C. Pedersen
15:40 - 16:05	<b>Coffee Break</b>
16:05 - 17:05	<b>Smartness and Fluid Power - Workshop in groups</b> <span style="float: right;"><i>Chairman: B. Winkler</i></span>
19:00 - 22:00	<b>Gala Dinner</b>

## Friday, 27 February 2015

Science Park 3, Intel Mobile Communications Hall (HS 19) / Science Park 1, Hydraulic Lab (MT 0033)

<b>08:00 - 09:15</b>	<b>Session 4: Valves</b> <span style="float: right;"><i>Chairman: N. Johnston</i></span>
08:00 - 08:25	<b>State of the Art in Digital Valve Technology</b> B. Winkler, A. Plöckinger and R. Scheidl
08:25 - 08:50	<b>Numerically Efficient Flow Model for On/Off Valves</b> M. Linjama, L. Siivonen, M. Huova, E. Stamm and H. Försterling
08:50 - 09:15	<b>Sensorless Position Estimation of Magnetic Actuators</b> J. Reuter, T. Braun and F. Straußberger
09:15 - 09:45	<b>Coffee Break</b>
<b>09:45 - 10:35</b>	<b>Session 5: Industrial Application</b> <span style="float: right;"><i>Chairman: S. Schmidt</i></span>
09:45 - 10:10	<b>Digital Hydraulic Micropositioning System for Milling Machines</b> R. Haas
10:10 - 10:35	<b>Digital Hydraulics and "Industrie 4.0"</b> R. Brandstetter, T. Deubel, R. Scheidl, B. Winkler and K. Zeman
10:35 - 11:05	<b>Break</b>
<b>11:05 - 12:35</b>	<b>Lab Demonstrations and Farewell Party</b>
	<ul style="list-style-type: none"> <li>▪ Digital Micropositioning</li> <li>▪ Digital Position Control of Large Drives</li> <li>▪ New Digital Valves</li> <li>▪ Hydraulic Stepper Drive</li> <li>▪ High Frequency Oscillation Pump</li> <li>▪ Frequency Response Function Measurements in Hydraulic Pipeline Systems</li> </ul>