22nd International Conference on Hydraulics and Pneumatics

October 23. - 25. 2013, Prague, Czech Republic

Organized by:

Czech Mechanical Engineering Society
section

Czech Association for Hydraulics and Pneumatics
(www.cahp.cz)

and

Dept. of Control Systems and Instrumentation Faculty of Mechanical Engineering
VSB - Technical University of Ostrava
(www.352.vsb.cz)

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We are pleased to invite you to contribute to the 22nd International Conference on Hydraulics and Pneumatics which will be held on October 23. - 25. 2013 in Prague 1, Novotného lavka 200/5.

Petr Noskievič and Radim Olšovský
On behalf of Scientific and Organizing Committees

The objective
The objective of the conference is to provide an opportunity to exchange high quality, recent information on development, design and research in the field of hydraulics and pneumatics. The conference aims to bring industrial engineers together with researchers in fluid power and present news from research and interesting industrial applications of the fluid power systems (FPS).

The main topics of the conference are as follows:

- Hydraulic systems in production equipments
- Hydraulic systems for mobile applications
- Development in hydraulic elements: pumps, valves
- Pneumatic systems and their applications
- Pneumatic components and their innovation
- Fluid power in automotive, industry and agriculture
- Electronics and fluid power systems, mechatronics, application of artificial intelligence in FPS
- Modelling, simulation and computational problems and tools by the development and design of the fluid power components and systems
- University and professional education in fluid power systems branch

Conference languages: English, Czech, Slovak
Simultaneous translating service will be available for participants.

Registration
Please, register your contribution to the conference on http://ichp2013.vsb.cz (application form). Do not hesitate to consult any problem about it with JASTA, travel agency., Hana Kropíková, tel. +420 602 322 900 or e-mail: hkropikova@telecom.cz

Conference fee ...... 380,- EUR
Conference fee includes participation in the workshop, conference proceedings, welcome party, refreshments during the conference and the evening party on Thursday, 24.10.2013 in „Malostranska beseda“ restaurant.
You will receive the invoice for paying your conference fee from JASTA travel agency after your registration on http://ichp2013.vsb.cz.

Conference place
House of Czech Union of Scientific Technical Societies, Prague 1, Novotného lavka 200/5, Conference room No 418.

Transport access
It is possible to use the city public transport – underground railway, line A. Leave it at the station „Staromestska“ and then pass through the „Krizovnicka“ street or use the tram, line 17 or 18 to the station „Karlovy lazne“.
# Conference Programme

## 23rd of October 2013 in the theatre hall of the restaurant “Klub Lavka”, Praha 1, Novotneho lavka 1

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<td>17.00 – 19.00</td>
<td>Registration</td>
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<td>18.00 – 19.00</td>
<td>Welcome party</td>
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## 24th of October 2013 in the conference room No. 418, Prague 1, Novotneho lavka 200/5

<table>
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<tr>
<td>08.00 – 09.00</td>
<td>Registration</td>
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<tr>
<td>09.00 – 09.15</td>
<td>Conference opening</td>
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| 09.15 – 10.15 | **Section Hydraulic systems 1** - *Chairman: prof. Ing. Petr Noskievič, CSc.*  
Control Strategies for a Novel Blended Hydraulic Hybrid Transmission  
*Michael Sprengel and Monika Ivantysynova*  
Filtration of Modern Zinc-free and Ashless Hydraulic and Lubrication Oils  
*Andrei Wenzel* |
| 10.15 – 10.45 | Coffee break                                                                                                                       |
| 10.45 – 12.00 | **Section Hydraulic systems 1 (continuing)** - *Chairman: prof. Takao Nishiumi*  
Thermal-hydraulic Behavior Prediction of a Valve Controlled Wheel Loader  
*Enrique Busquets and Monika Ivantysynova*  
Change of Oil Properties with Bubble Elimination in Hydraulic Systems  
Sayako Sakama, Hiroyuki Goto, Ryushi Suzuki and Yutaka Tanaka  
3-joint robot finger using electro-conjugate fluid  
*Kiho Kobayashi, Kenjiro Takemura, Shinichi Yokota and Kazuya Edamura* |
| 12.00 – 13.00 | Lunch                                                                                                                              |
| 13.00 – 14.45 | **Section Modelling and Simulation** - *Chairman: prof. Jaroslav Stryczek*  
Theoretical Analysis of a Hydraulic Helmholtz Silencer with Flat Shapes  
Tetsuya Kuribayashi, Takayoshi Ichiyanagi and Takao Nishiumi  
Numerical modelling of the flow in eccentrically deposited annulus  
Michal Kozdera, Marian Bojko and Sylva Drábková  
Cavitation when closing of the valve at the beginning pipeline  
Jana Jablonská and Milada Kozubková  
CFD Model of Flow in the Outlet Channel of Floating Chamber Using Dynamic Mesh  
Karol Stračár, Jozef Krchnár and Karol Prikkel  
Simulation model of proportional pilot operated pressure relief valve SR4P2-B2,  
ARGO-HYTOS  
Eduard Englberth |
| 14.45 – 15.15 | Coffee break                                                                                                                       |
| 15.15 – 16.30 | **Section Hydraulic Components** - *Chairman: prof. Ing. Karol Prikkel*  
Evaluation of pump characteristic when speed is changed  
Daniel Himr and Vladimír Habán  
Measurement of a radial piston hydromotor at low rotational speed  
Štěpán Fiala  
Development and testing of high-pressure gear pumps for using of ecological and non-flammable liquids  
Vladimír Perník  
Control of Asymmetric Hydraulic Actuator  
Petr Noskievič |
<p>| 17.00 – 19.00 | Guided sightseeing tour across Prague ended in “Malostranska beseda” restaurant                                                   |
| 19.00 – 22.00 | Party in “Malostranska beseda”, Prague 1, Malostranske namesti 21                                                                    |</p>
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| 8.30 - 10.15 | **Section Hydraulic Systems 2** - Chairman: Ing. Přemysl Malý, CSc. | Energy saving hydraulic drives of industrial machines  
Tomáš Krannich and Stanislav Maňas  
“Drive Controlled Pump” – energy saving solution for hydraulic systems  
Radim Olsovsky and Gerd Scheffel  
Service Life Hydraulic Cylinders  
Luděk Pochylý  
Theatre technique application using speed controlled pumps  
Otakar Ožan and Petr Suchomel  
CNC Turning Table Hydrostatic Guide Way  
Eduard Stach, Martin Mareš & Matěj Sulitka |
| 10.15 - 10.45 | **Coffee break** |                                                                 |
| 10.45 - 12.45 | **Section Mobile Systems** - Chairman: Dr. Ing. Radim Olšovský | Design of Hydraulic Circuit and Field Measurement of Mechanical Pruner Drive for Hops on Low Trellises  
David Hoffmann, Petr Heřmánek, Adolf Rybka and Ivo Honzík  
Fluid power in automotive applications  
Roman Jaros  
Hydraulic motors for bucket wheel excavators (BWE) and bucket wheel reclaimers (BWR)  
Adam Musiolek  
Modernization of the equipment AM 50  
David Kocourek, Rudolf Benda and Eduard Konvalina  
Use of experimental stand for research of kinetic energy recovery  
Josef Nevrý, Martin Fichta, Miroslav Jurík, Zdeněk Němec, Štěpán Drha and Tomáš Panáček  
Hydraulic system of the double-decker bus doing press-ups  
Tomas Velebil and Ivo Prikryl |
| 12.45 - 13.00 | **Conference conclusions** |                                                                 |

**The Conference is connected with the exhibition of companies:**
BOSCH REXROTH, spol. s r.o., Brno  
ČVUT Praha, Fakulta strojní  
GLENTOR s.r.o., Praha  
HYDAC spol. s r.o., Planá nad Lužnicí  
HYDRAULICS s.r.o., Sehradice  
JIHOSTROJ a.s., Velešín  
PARKER HANNIFIN s.r.o., Klecany

**Further Informations**
The further informations about the Conference will be given on the internet page of the Conference  