



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 22th International Conference on Hydraulics and Pneumatics which will be held on October 23. - 25. 2013 in Prague 1, Novotneho 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 automative, 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, Novotneho 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

17.00 – 19.00 Registration

18.00 – 19.00 Welcome party

24th of October 2013 in the conference room No . 418, Prague 1, Novotneho lavka 200/5

08.00 – 09.00 Registration

09.00 – 09.15 Conference opening

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 Ichianagi 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

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

25th of October 2013 in the conference room No . 418, Prague 1, Novotneho lavka 200/5

8.30 – 10.15 **Section Hydraulic Systems 2 - Chairman: Ing. Přemysl Malý, CSc.**

Energy saving hydraulic drives of industrial machines

Tomáš Krannich and Stanislav Mañas

“Drive Controlled Pump” – energy saving solution for hydraulic systems

Radim Olšovský and Gerd Scheffel

Service Life Hydraulic Cylinders

Luděk Pochylý

Theatre technique application using speed controlled pumps

Otakar Ožana 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 Nevrlý, Martin Fichta, Miroslav Jurik, 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

JHHOSTROJ 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

<http://ichp2013.vsb.cz> a <http://www.jasta.cz>