The 9th International Fluid Power Conference took place from the 24th to 26th of March 2014 in Aachen.

The IFK, one of the world's largest scientific conferences on fluid power, unites scientists with industry in an international forum to exchange knowledge in the area of hydraulic and pneumatic drives and control systems.

The Institute for Fluid Power Drives and Controls (IFAS) at RWTH Aachen University and the Institute of Fluid Power (IFD) at TU Dresden alternately organize the conference every two years.
For the first time, this year’s conference offered participants the possibility to submit their manuscripts for peer-review.

Conference MOTTO:

„Modern Fluid Power Challenges, Responsibilities, Markets“

Venue of the conference

The conference was held in the Palace of Congresses called EUROGRES from Aachen

The Congress Center "Eurogress - outside
Palace of Congresses EUROGRES - intside
The structure of the Conference

The conference was designed to run on the following directions:
- **Symposium** for researchers in universities;
- **Colloquium / conference** for the presentation of articles to industrial applications;
- **Poster Session** of presentation of the articles in the form of posters;
- **Exhibition** of achievements of components and equipment in the field **FLUID POWER**

General Programme of the 9th IFK in Aachen

The three conference days are subdivided in one day symposium (24th March) and two days colloquium (25th and 26th March).

Symposium 24 March, 2014

In the first day, **On Monday, 24 March 2014**, the IFK begins with an **international symposium** providing a platform for **fundamentals and interactive** demonstrations. The **symposium** was reserved to provide researchers from universities the opportunity to present their research projects to a wide international community of scientists.

Opening evening 24 March 2014

Also, on 24 March 2014, **an informal opening event** took place in the foyer of the **Eurogress**. 

Trade fair and conference official was opened as well.

Colloquium / Conference 25 March to 26 March 2014

The conference on **Tuesday 25 March and Wednesday 26 March 2014** were held, also, in the Eurogress, in Aachen.
Conference Banquet 25 March 2014

The conference banquet was scheduled for Tuesday evening, 25 March 2014, in the Coronation Hall of the Aachen town hall. A rich banquet accompanied by the traditional entertainment programme, performed by the IFAS staff have made a memorable social event..

Laboratory Party 26 March 2014

On Wednesday evening, 26 March 2014, all participants and accompanying persons were invited to visit the IFAS laboratory for a post-conference party with snacks and free beverages.

The developing of the Conference and main topics

- An unofficial opening occurred Monday morning, when predominantly derived from research participants were welcomed to the workshop. Focus of the workshop were new approach in simulation methodology and introduce the component level and system

- Welcome to the official and therefore the start of colloquium was given by Univ.-Prof Schmitt (Dean of RWTH), followed by Mr. Kienzie (Chair of Fluid Power Association VDMA). An overview of the industry's economic balance of fluid power and their performance were presented.

- Among the key topics included, among others: renewable energy, mobile applications technology and new applications of technology fluid power.

- In addition, it was possible to integrate Digital Workshop Fluid Power (DFP), the IFK and so a wide audience of experts made available.

- The 146 presentations, including four plenary lectures and numerous lectures overview were presented to an international audience of over 700 participants from 30 countries.

- Proportion of participants from outside Europe was 12%.
- Among the participants were strongly represented in the Far East (China 44%, Japan 19%, South Korea 10%).

- The exhibition, which accompanies the Conference, was inaugurated by Prof. Murrenhoff, Monday night. In this year, the Gress Exhibiting was fully with 38 exhibitors and thus offered visitors plenty of space and opportunities to get the latest news in the industry and discuss.

- Traditionally the Colloquium was accompanied by a supporting program which culminated on Tuesday night, the Coronation Hall of Aachen's historic town hall.
Conclusion of the conference

The official conclusion of 9 IFK was Wednesday night, when were presented two general presentations on current research areas of fluid technology:
- one from U.S. A., supported by Prof. Kim STELSON from Inoversity of Minisota, and
- others from China, supported by Prof. Yang.

The participation of the INOE 2000-IHP at 9th IFK-2014

At this international scientific conference, INOE 2000-IHP has attended with 2 papers:

   **Authors:** Corneliu CRISTESCU, Catalin DUMITRESCU și Radu RADOI

2. *Used common PLCs for closed loop hydraulic drives.*
   **Authors:** Marian BLEJAN, Ioana ILIE, Andrei DRUMEA.

The papers have been presented in **POSTER SESION** by Corneliu CRISTESCU and Marian BLEJAN.
Persons contacted during conference 9IFK-2014

During Conference, have been established some contacts with important scientific persons and, also, with persons from different companies exhibiting.
Dr. Ing. Heinrich THEISSEN  
IFAS Past Scientific Director,  
AACHEN, GERMANIA

Prof. Jurgen WEBER  
IFD Director,  
DRESDEN, GERMANIA

Prof. Rudolf SCHEIDL  
Johannes KEPLER University,  
LINZ, AUSTRIA
Ms. Katharina SCHRANK
IFAS Deputy Chief Engineer,
AACHEN, GERMANIA

Ms. Katharina SCHRANK will join in the 2014 HERVEX conference, as the IFAS representative
Party in the Laboratory of Fluid Power from IFAS

On Wednesday evening, 26 March 2014, all participants and accompanying persons has been invited to visit the IFAS Laboratory for a post-conference party with snacks and free beverages.

During subsequent Hallenfest in experimental halls IFAS, the symposium impressions were presented in a relaxed atmosphere, discussed and evaluated.
The Congress Center "Eurogress

IFAS - RWTH Aachen University

Scientific Research and ...SPORT with Prof. H. H.
### Topics Structure of the Conference 9IFK-2014

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**Remarks:**
- cel mai mare număr de sesiuni este dedicat pentru **Simulation** (7);
- pentru **Systems**, care, probabil, include **hydraulica industriala** (5);
- **hidraulica mobila** este bine reprezentată / cercetată (4 +4);
- **Components** and **Pneumatics**, normale (4+3);
- surprinzător, **Renewable Energy** este prezentat doar într-o sesiune (1); **HORIZON 2020** pune accentul pe **energy efficiency** !!

### Paper presentation
- prezentări de calitate, intens **culorate**;
- **softuri** moderne de prezentare (nu doar PP?);
- foarte **putin text** (3-4 randuri pe slide), chiar fără;
- multe **figuri si diagrame**;
- schemele+click=**animate**;
- foto clare+click = **filme**!
- se incepe cu un sumar:
  problema de cercetat, , metodologia, rezultate si concluzii:

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Concluzii si tendinte in FLUID POWER

In urma participarii la 9IFK-2014, se desprind urmatoarele concluzii si tendinte:

- creste importanta hidraulicii mobile ca obiect de cercetare, dar si ca aplicatii concrete;
- in hidraulica mobila, dar nu mumai, tinde sa se generalizeze idea de recuperare a energiei;
- ideea eficientizarii energetice a sistemelor de actionare este este urmarita cu mare interes;
- hidraulica industriala nu mai este urmarita ca atare, dar, probabil, este inglobata in Systems;
- creste interesul pentru reducerea pierderilor energetice de orice fel, indiferent de marime;
- pentru prima data apare o sesiune speciala de HIDRAULICA DIGITALA, sesiune moderata de Prof. Rudolf SCHEIDL);
- scade interesul pentru ulizarea SERVOVALVEILOR, consumatoare de energie (nici o lucrare);
- apare tendinta de eliminare a...distribuitoarelor, prin utilizarea unor pompe cu pistoane radiale si cu excentric variabil, comandate proportional, pentru actionarea MHL (firma MOOG), sau a MHR, (firma FLUIDON); A aparut si conceptul de Hybrid Pump
- se dezvolta mult...conceptul de MICROHYDRAULICS, prin dezvoltarea de componente de dimensiuni si debite mici (THE LEE COMPANY);
- in scopul cresterii eficientei energetice, se dezvolta distribuitoarele hibride integrate, din clasa Regenerative and Hybrid Valves, cu doua moduri de lucru: Regenerative mode, pentru viteze ridicate, si Standard mode, pentru forte ridicate/mari, (firma PARKER),

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- promovarea materialelor compozite și a aliajelor de aluminiu, în scopul reducerii greutății componentelor, cu pana la 60%, în mod special pentru distribuitaore și acumulatoare hidraulice cu piston (firma PARKER), prin promovarea conceptului de LIGHTHYDRAULICS;
- promovarea aliajelor de aluminiu pentru realizarea blocurilor hidraulice (manifolds) și chiar distribuitoare pentru hydraulică mobile);
- dezvoltarea de actuațoare electromagnetice cu performante ridicate (firma THOMAS MAGNETE si MAGNETSCHULTZ);
- Diversificarea domeniilor de aplicare a FP: on / off shore, in ocean, in cosmos etc.

Teme propuse la IFAS-Aachen, pentru un consortiu/parteneriat la HORIZON 2020

INOE 200-IHP a inaintat, in scris, doua propuneri de teme pentru un parteneriat cu IFAS pe HORIZON 2020, si anume:

1. THE INCREASING OF THE ENERGY EFFICIENCY OF THE HYDRAOSTATIC TRANSMISSIONS, BY USING THE PERFORMANCE TECHNOLOGIES;
2. THE DEVELOPMENT OF TRIBOLOGICAL RESEARCH ACTIVITIES IN ORDER TO INCREASING OF THE LIFESPAN OF FLUID POWER EQUIPMENTS.

Let's not forget:

The Motto of FP Conference 9IFK-2014:
MODERN FLUID POWER-Challenges, Responsibilities, MARKETS!