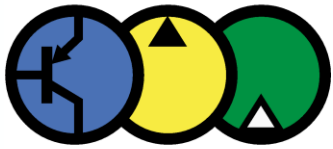


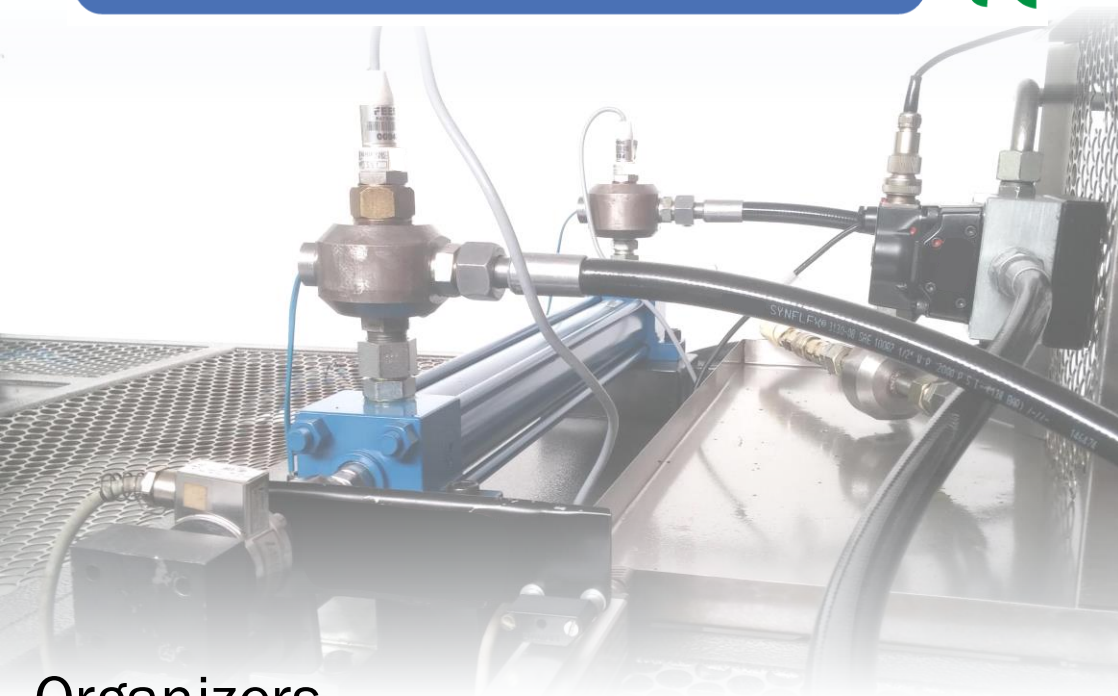
# 4<sup>th</sup> Workshop on Innovative Engineering for Fluid Power



# WIEFP

# 2018

NOVEMBER 28-30 • SÃO PAULO • BRAZIL



## Organizers





# WIEFP

# 2018



NOVEMBER 28-30 • SÃO PAULO • BRAZIL

**09:30-10:00 Registration**

---

**10:00-12:10 Session 1. Challenges & Innovation - Chair: Victor J. De Negri**

	<b>Luciana Pereira</b>	Coordinator Innovation.UFABC	<b>UFABC/ Innovation.UFABC</b>
<b>10:00-10:30</b>	Welcome and introduction	<b>Victor J. De Negri</b>	Coordinator LASHIP <b>UFSC/LASHIP</b>
		<b>Petter Krus</b>	Director FLUMES <b>LIU/FLUMES</b>
<b>10:30-11:10</b>	<i>Keynote Speaker</i> Is there a future for fluid power?	<b>Kim Stelson</b>	Professor <b>University of Minnesota/ CCEFP</b>
	<i>Invited Speaker</i>		
<b>11:10-11:40</b>	Creating a collaboration environment between Sweden and Brazil	<b>Alessandra Holmo</b>	Managing Director <b>CISB</b>
	<i>Invited Speaker</i>		
<b>11:40-12:10</b>	Brazil-Sweden Cooperation in Aeronautics	<b>Mats Olofsson</b>	Chairman of Swe-Bra Aeronautical Committee <b>Innovair</b>
<b>12:10-13:00</b>	<b>Lunch break</b>		
<b>13:00-13:30</b>	<b>Networking coffee</b>		

---

The 4th Workshop on Innovative Engineering for Fluid Power is a Swedish-Brazilian initiative started in 2012 focused on promoting the collaboration in the development of technologies, education, innovation management, methods and tools for hydraulic and pneumatic system development and design. The first two editions occurred in São Paulo, at the Brazilian Association of Machinery and Equipment (ABIMAQ) headquarters. The 3rd edition took place in Florianópolis along with the FPNi2016, at the Campus of the Federal University of Santa Catarina (UFSC)

# WORKSHOP PROGRAM

## Wednesday, November 28, 2018

---

### 13:30-15:00 Session 2. Pneumatic & Hydraulic Systems - Chair: Paulo R. G. Kurka

<b>13:30-13:50</b>	Positioning System of a Pneumatic Actuator Driven by Proportional Pressure Regulator Valves	<b>Gabriel A. Muzy</b>	Engineer	<b>Emerson IFSP</b>
<b>13:50-14:10</b>	Design of an Experimental Workbench for Force Control Tests with Pneumatic Actuators	<b>Antonio C. Valdiero</b>	Professor	<b>UNIJUÍ</b>
<b>14:10-14:30</b>	Hydraulic Pressure Fed System Using Helium Gas and Fast Electro-Hydraulic Actuator Applied to Brazilian Sounding Rockets and Microsatellite Launchers	<b>Euler C. M. G. Barbosa</b>	Researcher	<b>ITA</b>
<b>14:30-15:00</b>	<i>Invited Speaker</i> Indirect Control on Hydraulic Closed Loop Systems	<b>Waldir Vianna Jr.</b>	General Manager	<b>ARGO-HYTOS</b>
<b>15:00-15:30</b>	<b>Coffee Break</b>			

---

### 15:30-17:00 Session 3. Machine Automation & Control - Chair: Emília Villani

<b>15:30-15:50</b>	Controlling of Gearbox Lubricant Volume for a Gear Test Rig	<b>Thiago N. Cunha</b>	Researcher	<b>ITA</b>
<b>15:50-16:10</b>	Development and Construction of an Instrumented Workbench for Characterization of Hydraulic Motors	<b>Luís C. Wachholz</b>	Researcher	<b>UNIJUÍ</b>
<b>16:10-16:30</b>	Predictive Control Design Based on System Identification of an Electro-hydraulic Actuator Applied to Brazilian Sounding Rockets and Microsatellite Launchers	<b>Thiago S. Xavier</b>	Researcher	<b>ITA</b>
<b>16:30-17:00</b>	<i>Invited Speaker</i> A new generation of hydraulic supply units with integrated intelligence, sensor technology and condition monitoring	<b>Wagner Mattos</b>	Machinery Application and Eng. Manager	<b>Bosch Rexroth</b>

---



# WIEFP

# 2018



NOVEMBER 28-30 • SÃO PAULO • BRAZIL

## 08:00-08:30 Registration

---

### 08:30-10:10 Session 4. Hydraulic Systems & Applications - Chair: André Pierre Mattei

*Invited Speaker*

<b>08:30-09:00</b>	Electrohydrostatic Actuation System (EAS): Energy efficient, high force and compact alternative to conventional actuation systems	<b>Mario F. Valdo</b>	General Manager	<b>Moog South America</b>
<b>09:00-09:20</b>	Simulation and Optimization of a Hydraulic Transmission Applied in a Fire Fighting System for Off-shore Platforms	<b>Eduardo B. Felipe</b>	Researcher	<b>Bosch Rexroth</b>
<b>09:20-09:40</b>	Overview of Digital Hydraulic Actuator (DHA) Concept for Aircraft	<b>Henri C. Belan</b>	Professor	<b>IFSC UFSC/LASHIP</b>
<i>Invited Speaker</i>				
<b>09:40-10:10</b>	Development and Innovation of Fluid Power Solutions for Industry in a Local Productive Arrangement (APL)	<b>Antonio C. Valdiero</b>	Professor	<b>UNIJUÍ</b>

### 10:10-10:30 Coffee break

---

### 10:30-12:10 Session 5. Entrepreneurship - Chair: Luciana Pereira

*Invited Speaker*

<b>10:30-11:00</b>	Ecosystem of innovation in Sweden and Brazil – some lessons	<b>Flávia G. Motta</b>	Business Development Manager	<b>Institute for Technological Research</b>
<i>Invited Speaker</i>				
<b>11:00-11:30</b>	Digitalization Revolution and it's Applications to Industry and Society	<b>Paulo R. G. Kurka</b>	Professor	<b>Unicamp</b>
<i>Keynote Speaker</i>				
<b>11:30-12:10</b>	Supporting entrepreneurship and innovation in an academic context	<b>Magnus Klofsten</b>	Professor	<b>Linköping University/ CIE</b>

### 12:10-13:00 Lunch break

### 13:00-13:30 Networking coffee

---

# WORKSHOP PROGRAM

## Thursday, November 29, 2018

---

### 13:30-15:00 Session 6. Academia & Industry Collaboration - Chair: Petter Krus

<b>13:30-13:50</b>	Analysis of the Cooperation Model Between Industry, University, Research Center and Government for the Scheduling of Technologies	<b>Jayson L. S. Ribeiro</b>	Researcher	<b>UFABC</b>
<b>13:50-14:10</b>	A Proposed Framework to Identify Digital Transformation Maturity in Small Industries	<b>Laís S. da Costa</b>	Researcher	<b>UFABC</b>
<b>14:10-14:30</b>	Proposed Business Model of a Microlearning-based Platform for Continuing Professional Education of Industry Members	<b>José Ricardo M. S. Gerbaudo</b>	Researcher	<b>UFABC</b>

### 14:30-15:00 Panel: Academic-Industrial Collaboration

### 15:00-15:30 Coffee Break

---

### 15:30-17:10 Session 7. Robotics - Chair: Torben Ole Andersen

<b>15:30-16:00</b>	<i>Invited Speaker</i> Development of an Small Diameter Hydraulic Robot for Pipe Clearance Application	<b>Eduardo A. Perondi</b>	Professor	<b>UFRGS</b>
<b>16:00-16:30</b>	<i>Invited Speaker</i> SIVOR Simulator as a Validating Tool for New Aircraft Technologies	<b>Emília Villani</b>	Professor	<b>ITA</b>
<b>16:30-17:10</b>	<i>Keynote Speaker</i> Research of the electro-hydraulic exoskeleton robot	<b>Xiaoping Ouyang</b>	Professor	<b>Zhejiang University</b>

---

### 17:10-19:00 Social Gathering - Sponsored by Saab AB



# WIEFP

# 2018



NOVEMBER 28-30 • SÃO PAULO • BRAZIL

**08:00-08:30 Registration**

---

**08:30-10:00 Session 8. Aircraft & Mobile Systems I - Chair: Luiz Carlos S. Góes**

	<i>Invited Speaker</i>			
<b>08:30-09:00</b>	Contributions from the SENAI Innovation Institute for Embedded Systems in the creation of a Brazilian Aerospace HUB in Florianópolis	<b>André Pierre Mattei</b>	Institute for Embedded Systems Director	<b>SENAI</b>
<b>09:00-09:20</b>	Proposal of an Autonomous System for Inspection of Structures	<b>Gabriel Silva</b>	Researcher	<b>UFABC</b>
<b>09:20-09:40</b>	Hardware-in-the-loop Simulation of Complex Hybrid Hydromechanical Transmissions	<b>L. Viktor Larrson</b>	Researcher	<b>Linköping University</b>
<b>09:40-10:00</b>	Aircraft Braking Dynamics and Brake System Modeling for Fault Detection and Isolation	<b>Lucas C. Navarro</b>	Researcher	<b>ITA</b>

**10:00-10:30 Coffee break**

---

**10:30-12:10 Session 9. Aircraft & Mobile Systems II - Chair: Xiaoping Ouyang**

	<i>Invited Speaker</i>			
<b>10:30-11:00</b>	Fault Detection and Identification of Hydraulic Systems Using Bond-Graph Modeling	<b>Luiz Carlos S. Góes</b>	Professor	<b>ITA</b>
<b>11:00-11:20</b>	Perspectives on Aircraft Actuation System Development	<b>Alessandro Dell'Amico</b>	Systems Engineer	<b>Saab AB</b>
<b>11:20-11:40</b>	SIVOR: A Testbed for the Evaluation of On-Off Valves on an F16 Airplane - Viability Analysis	<b>Guilherme S. Natal</b>	Researcher	<b>ITA</b>
<b>11:40-12:10</b>	<i>Invited Speaker</i> Hydraulic Hybrid for Off-Road Vehicles	<b>Marcelo Schumacher</b>	Engineering & BD Off-Highway Manager	<b>Eaton</b>

**12:10-13:00 Lunch break**

**13:00-13:30 Networking coffee**

---

# WORKSHOP PROGRAM

## Friday, November 30, 2018

---

### 13:30-15:30 Session 10. Design & Manufacturing - Chair: Alessandro Dell'Amico

<b>13:30-14:00</b>	<i>Invited Speaker</i> NPD Lead Time Reduction: Hydraulic Cylinder Cushioning System Design - A Case Study	<b>Joseph Thomas</b>	Country Manager & Managing Director	<b>Wipro Brazil</b>
<b>14:00-14:30</b>	<i>Invited Speaker</i> Energy savings in machinery and inclusion of an additive manufacturing process for new products	<b>Fabio S. Mininel</b>	National Sales Manager	<b>Parker Hannifin</b>
<b>14:30-15:10</b>	<i>Keynote Speaker</i> Status and trends within Digital Fluid Power	<b>Torben Ole Andersen</b>	Professor	<b>Aalborg University</b>

### 15:10-15:30 Closing Session

---

#### Organizing Committee

##### General Co-Chairs

Luciana Pereira, UFABC, Brazil  
Victor J. De Negri, UFSC, Brazil  
Petter Krus, Linköping University, Sweden

##### Chair CISB

Alessandra Holmo, CISB, Brazil

##### Chair CSHPA/ABIMAQ

Gustavo M. Szysmiowicz, CSHPA/ABIMAQ, Brazil

##### Conference Administrators

Artur Tozzi C. Gama, UFSC, Brazil  
Vinícius Vígolo, UFSC, Brazil

#### Scientific Committee

Alexandre Orth, Bosch Rexroth AG, Germany  
Antônio Carlos Valdiero, UNIJUÍ, Brazil  
Eduardo André Perondi, UFRGS, Brazil  
Emilia Vilani, ITA, Brazil  
Luiz Carlos Sandoval Góes, ITA, Brazil  
Magnus Sethson, Linköping University, Sweden  
Maurício Garcia, Emerson, Brazil  
Paulo Roberto Gardel Kurka, Unicamp, Brazil  
Tatiana Minav, Aalto University, Finland  
Thiago Boaventura, USP, Brazil

## Workshop Timetable

	Wednesday - Nov. 28	Thursday - Nov. 29	Friday - Nov. 30
08:00		Registration	Registration
08:30		<b>Invited Speaker (25 + 5)</b>	<b>Invited Speaker (25 + 5)</b>
09:00		2 Presentations (15 + 5)	3 Presentations (15 + 5)
09:30	Registration	<b>Invited Speaker (25 + 5)</b>	
10:00	Welcome	Coffee break	Coffee break
10:30	<b>Keynote Speaker (30 + 5)</b>	2 Invited Speakers (25 + 5)	<b>Invited Speaker (25 + 5)</b>
11:00	<b>2 Invited Speakers (25 + 5)</b>		2 Presentations (15 + 5)
11:30		<b>Keynote Speaker (30 + 5)</b>	<b>Invited Speaker (25 + 5)</b>
<b>12:10</b>	Lunch break	Lunch break	Lunch break
13:00	Networking coffee	Networking coffee	Networking coffee
13:30	3 Presentations (15 + 5)	3 Presentations (15 + 5)	<b>2 Invited Speakers (25 + 5)</b>
14:00			
14:30	<b>Invited Speaker (25 + 5)</b>	<b>Panel: Acad-Ind</b>	<b>Keynote Speaker (30 + 5)</b>
15:00	Coffee break	Coffee break	Closing Session
15:30	3 Presentations (15 + 5)	<b>2 Invited Speakers (25 + 5)</b>	
16:00			
16:30	<b>Invited Speaker (25 + 5)</b>	<b>Keynote Speaker (30 + 5)</b>	
<b>17:10</b>		Social Gathering	

[www.laship.ufsc.br/site/en/wiefp2018/](http://www.laship.ufsc.br/site/en/wiefp2018/)

**Phone:** 55 48 3721 4123 / 55 48 3721-9396

**Email:** [wiefp.ctc@contato.ufsc.br](mailto:wiefp.ctc@contato.ufsc.br) / [contato@laship.ufsc.br](mailto:contato@laship.ufsc.br)

**Support**



**Sponsor**

