2012 2nd International Conference on Applied Robotics for the Power Industry

(CARPI 2012)

Zurich, Switzerland
11 – 13 September 2012
Technical Program for Tuesday September 11, 2012

Tu1A

Robotic Crawlers (Regular Session)
Chair: Zwicker, Ekkehard
ALSTOM Inspection Robotics

09:15-09:35 Tu1A.1
Imhof, Agnes
Bern Univ. of Applied Sciences
Oetiker, Moritz
ALSTOM Inspection Robotics Ltd
Jensen, Bjørn
Bern Univ. of Applied Sciences

11:55-12:15 Tu2A.3
Development of an Automated System for Cavitation Repairing in Rotor of Large Hydroelectric Plants, pp. 39-44.
Simas, Henrique
Univ. Federal de Santa Catarina
Golin, Julio Feller
IFSC - Campus Geraldo Werninghaus
De Pieri, Edson Roberto
Univ. Federal de Santa Catarina
Martins, Daniel
Univ. Federal de Santa Catarina

12:15-12:35 Tu2A.4
Support of Power Plant Telemaintenance with Robots by Augmented Reality Methods, pp. 45-49.
Leutert, Florian
Univ. Wuerzburg
Schilling, Klaus
Univ. Wuerzburg

12:35-12:45 Tu2A.5
Robotic Polishing of Turbine Runners, pp. 50-51.
Sabourin, Michel
Alstom Hydro Canada
Paquet, Francois
Alstom Hydro Canada
Hazel, Bruce
Inst. de Recherche d'Hydro-Quebec
Cote, Jean
Inst. de Recherche d'Hydro-Quebec
Mongenot, Patrick
Inst. de Recherche d'Hydro-Quebec

Tu2A

Power Plant Maintenance (Regular Session)
Chair: de Vries, Vera
Alstom Switzerland Ltd.

11:15-11:35 Tu2A.1
Honold, Simon
Alstom Switzerland Ltd
Roth, Philipp
Waterjet Tech. AG
de Vries, Vera
Alstom Switzerland Ltd.

15:30-15:50 Tu3A.2
Fetter Lages, Walter
Federal Univ. of Rio Grande do Sul
Scheeren, Vinicius
Federal Univ. of Rio Grande do Sul

15:50-16:10 Tu3A.3
Aerial Service Robotics: The AIRobots Perspective, pp. 64-69.
Marconi, Lorenzo
Univ. of Bologna
Basile, Francesco
Univ. of Salerno
Caprani, Gilles
ETH Zurich
Carloni, Raffaella
Univ. of Twente
Chiachiou, Pasquale
Univ. di Salerno
Huerzeler, Christoph
ETH Zurich
Lippiello, Vincenzo
Univ. di Napoli Federico II
Naldi, Roberto
CASY-DEIS Univ. of Bologna
Nikolic, Janosch
ETH

Tu3A

Unmanned Aerial Vehicles 1 (Regular Session)
Chair: Pradalier, Cedric
ETH Zurich

15:10-15:30 Tu3A.1
Real-Time Power Line Extraction from Unmanned Aerial System Video Images, pp. 52-57.
Liu, Yuee
Queensland Univ. of Tech.
Mejias, Luis
Queensland Univ. of Tech.

15:30-15:50 Tu3A.2
Fetter Lages, Walter
Federal Univ. of Rio Grande do Sul
Scheeren, Vinicius
Federal Univ. of Rio Grande do Sul

15:50-16:10 Tu3A.3
Aerial Service Robotics: The AIRobots Perspective, pp. 64-69.
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Nikolic, Janosch
ETH

Burri, Michael
ETH Zurich

Nikolic, Janosch
ETH Zurich

Huerzeler, Christoph
ETH Zurich

Caprari, Gilles
ETH Zurich

Siegwart, Roland
ETH Zurich

Aerial Service Robots: An Overview of the AIRobots Activity, pp. 76-77.

Marconi, Lorenzo
DEIS- Univ. of Bologna

Naldi, Roberto
CASY- DEIS Univ. of Bologna

Torre, Alessio
Univ. of Bologna

Nikolic, Janosch
ETH

Huerzeler, Christoph
ETH Zurich

Caprari, Gilles
ETH Zurich

Zwicker, Ekkehard
ALSTOM Inspection Robotics

Siciliano, Bruno
Univ. di Napoli Federico II

Stramigioli, Stefano
Univ. of Twente

Zwicker, Ekkehard
ALSTOM Inspection Robotics

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Univ. di Napoli Federico II

Lippiello, Vincenzo
Univ. di Napoli Federico II

Carloni, Raffaella
Univ. of Twente

Stramigioli, Stefano
Univ. of Twente

Power Line Inspection 1 (Regular Session)

Chair: Montambault, Serge
Hydro-Quebec

17:00-17:20  Tu4A.1

Fetter Lages, Walter
Federal Univ. of Rio Grande do Sul

Oliveira, Vinicius
Federal Univ. of Rio Grande

17:20-17:40  Tu4A.2

Fonseca Ribeiro, Alison
Eletrobras Furnas

Abdo, Ricardo Fraga
Eletrobras Furnas

Alberto de Oliveira, João
Eletrobras Furnas

17:40-18:00  Tu4A.3
Extended Applications of LineROVer Technology†, N/A

Zhang, Feng
Shandong Electric Power Res. Inst.

Cao, Lei
Shandong Electric Power Res. Inst.

Guo, Rui
Shandong Electric Power Res. Inst.

Zhong, Liang
Shandong Electric Power Res. Inst.

Jia, Juan
Shandong Electric Power Res. Inst.

Jia, Yonggang
Shandong Electric Power Res. Inst.

Chi, Xiaoming
Shandong Electric Power Res. Inst.

18:00-18:20  Tu4A.4
Pole Type Robot for Distribution Power Line Inspection, pp. 88-93.

Finotto, Vitor Cores
CTU, Prague

Hirakawa, Andre Riyuiti
Univ. of São Paulo

Chamas Filho, Alexandre
CPFL - Companhia Paulista de
Rowell, Timothy
Univ. of KwaZulu-Natal

Power Line Inspection 2 (Regular Session)
Chair: Fetter Lages, Walter
Federal Univ. of Rio Grande do Sul

Allan, Jean-Francois
Hydro-Quebec Res. Inst.

Hida, Minoru
Meijo Univ.
He, Yingxin
Meijo Univ.
Yamamoto, Yusuke
Meijo Univ.
Maekawa, Naoki
Meijo Univ.
Tatsuno, Kyoichi
Meijo Univ.
Kuni, Yasuyuki
Chubu Electric Power Co., Inc.

We2A
Power Line Inspection 3 (Regular Session)
Chair: Allan, Jean-Francois
Hydro-Quebec Res. Inst.

Intelligent On-Line Monitoring System Based on Elastic Wave for Damage Inspection on Overhead Transmission Lines, N/A
Chen, Hongtang
Shandong Electric Power Research Institute
Guo, Rui
Shandong Electric Power Res. Inst.
Zhao, Jinlong
Shandong Electric Power Res. Inst.
Zhang, Feng
Shandong Electric Power Res. Inst.
Zhong, Liang
Shandong Electric Power Res. Inst.

11:50-12:10
We2A.2

Results of a Testing Campaign of the Telerobotic System MT200-TAO in AREVA La Hague's Hot-Cells, pp. 157-162.
Garrec, Philippe
CEA
Geffard, Franck
CEA

We2A.3
A Simple Robot Manipulator Able to Negotiate Power Line Hardware, pp. 120-125.
Lorimer, Trevor
Univ. of KwaZulu-Natal
Boje, Ed
Univ. of KwaZulu-Natal

12:30-12:40
We2A.4

Montambault, Serge
Hydro-Quebec
Pouliot, Nicolas
Hydro-Quebec
Lepage, Marco
Hydro-Quebec

Use of Robotic Equipment in a Canadian Used Nuclear Fuel Packing Plant, pp. 139-144.
Marinceu, Dimitrie
NWMO
Murchison, Alan
NWMO
Hatton, Chris
NWMO

Flexible Multibody Dynamics and Control of a Novel Hydraulically Driven Hybrid Robot, pp. 145-150.
Al-Saedi, Mazin
Lappeenranta Univ. of Tech.
Handroos, Heikki
Lappeenranta Univ. of Tech.
Wu, Huapeng
Lappeenranta Univ. of Tech.

We3A
Robotics for Nuclear Power Plants 1 (Regular Session)
Chair: Garrec, Philippe
CEA

14:00-14:20
We3A.1

Gargiulo, Laurent
CEA

14:20-14:40
We3A.2

Papadimitriou, Vasileios
Innora S.A.
Roditis, Ioannis
Innora S.A.
Chatzakos, Panagiotis
Innora S.A.
Liapis, Dimosthenis
TWI NDT Validation Centre

14:40-15:00
We3A.3

Use of Robotic Equipment in a Canadian Used Nuclear Fuel Packing Plant, pp. 139-144.
Marinceu, Dimitrie
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Murchison, Alan
NWMO
Hatton, Chris
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Flexible Multibody Dynamics and Control of a Novel Hydraulically Driven Hybrid Robot, pp. 145-150.
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Handroos, Heikki
Lappeenranta Univ. of Tech.
Wu, Huapeng
Lappeenranta Univ. of Tech.

We3A.3

Robots for Nuclear Power Plants – Challenges and Future Perspectives, pp. 151-156.
Iqbal, Jamshed
COMSATS Inst. of Information Tech. Islamabad
Tahir, Ahmad Mahmood
Lahore Univ. of Management Sciences, Lahore
Raza, U.Islam
COMSATS Inst. of Information Tech. Islamabad
Riaz-un-Nabi, Syed
Italian Inst. of Tech. (IIT), Genova

15:00-16:10
We4A.3

Results of a Testing Campaign of the Telerobotic System MT200-TAO in AREVA La Hague's Hot-Cells, pp. 157-162.
Garrec, Philippe
CEA
Geffard, Franck
CEA
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<td>We5A</td>
<td>Power Substations (Regular Session)</td>
<td>Li, Li</td>
<td>Electric Power Robotics Lab., Shandong Electric Power Res.</td>
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<td>Li, Beidou</td>
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<td>Wang, Zhenli</td>
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<td>The Application of Image Based Vision Servo System for SmartGuard†</td>
<td>Li, Li</td>
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<td>Status Recognition of Isolator Based on SmartGuard†</td>
<td>Li, Li</td>
<td>Electric Power Robotics Lab., Shandong Electric Power Res.</td>
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<td>Wang, Shirong</td>
<td>Dali Power Supply Bureau, Yunnan Power Grid Corp.</td>
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<td>Luan, Yiqing</td>
<td>Shandong Electric Power Res. Inst.</td>
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<td>Wang, Mingrui</td>
<td>Shandong Electric Power Res. Inst.</td>
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## Technical Program for Thursday September 13, 2012

### Th1A

**Unmanned Aerial Vehicles 2 (Regular Session)**

**Chair:** Alexis, Konstantinos  
**ETH Zurich**

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<tr>
<td>09:00</td>
<td>1A.1</td>
<td>Planning Efficient and Robust Behaviors for Model-Based Power Tower Inspection</td>
<td>Wu, Hua, North China Electric Power Univ., Lv, Min, North China Electric Power Univ., Liu, Chang-An, North China Electric Power Univ., Liu, Chuyang, North China Electric Power Univ.</td>
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<td>09:20</td>
<td>1A.2</td>
<td>Applying Aerial Robotics for Inspections of Power and Petrochemical Facilities</td>
<td>Huerzeler, Christoph, ETH Zurich, Zwicker, Ekkehard, ALSTOM Inspection Robotics, Caprari, Gilles, ETH Zurich, Marconi, Lorenzo, Univ. of Bologna</td>
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### Th2A

**Robotics for Inspection (Regular Session)**

**Chair:** Hazel, Bruce  
**Inst. de Recherche d’Hydro-Quebec**

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