Preliminary Program

ECO-MOBILITY
Innovative systems, constructions and advanced material technologies

23-26 September 2013, Rzeszów, Krasiczyn, Łańcut

CONFERENCE ORGANIZED UNDER THE PATRONAGE OF:

DEPUTY PRIME MINISTER, MINISTER OF THE ECONOMY

PRESIDENT OF WARSAW UNIVERSITY OF TECHNOLOGY

TRANSPORT COMMITTEE OF THE POLISH ACADEMY OF SCIENCES

And

THE MAYOR OF RZESZÓW

Organizers:

1. Warsaw University of Technology: POIG Project ECO-Mobility, Faculties of Transport, Mechatronics, Electric Engineering, Electronics and Information Technology
2. Transport Committee of the Polish Academy of Sciences
3. Polish – Chinese Center for Dialogue of Scientists and Engineers
4. Chinese Academy of Engineering
5. Rzeszów City Hall
The following institutions will be represented during the conference:

1. Warsaw University of Technology,
2. Polish Academy of Sciences, 3. Rzeszów University of Technology,
4. Poznań University of Technology, 5. Kraków University of Technology,
6. Medical University of Warsaw, 7. University of Technology and
   Humanities in Radom,
8. Institute of Sports Science and Clinical Biomechanics, University of
   Southern Denmark, Odense, Denmark,
   Chinese Academy of Engineering, 12. National Key Laboratory of

THE HONORARY CONFERENCE COMMITTEE:

Prof. Władysław Włosiński PhD., Eng. (Chairman of the Honorary Committee),
Prof. Jan Szmidt PhD., Eng. (President of Warsaw University of Technology),
Prof. Marek Orkisz PhD., Eng. (President of Rzeszów University of Technology),
Prof. Andrzej Mastalerz PhD., Eng. (President of University of Physical
   Education in Warsaw), Prof. Zbigniew Łukasik PhD., Eng. (President of
   University of Technology and Humanities in Radom), Prof. Xu Binshi (Chinese
   Academy of Engineering), Prof. Zhu Sheng (Director of National Key
   Laboratory for Remanufacturing, China)

SCIENTIFIC COMMITTEE:

1. Prof. Włodzimierz Choromański, PhD., Eng.
   (Chairman of the Conference, Warsaw University of Technology,
   Leader of the ECO-Mobility Project),
2. Prof. Iwona Grabarek PhD., Eng. (Warsaw University of Technology,
   Faculty of Transport),
3. Prof. Janusz Dyduch PhD., Eng. (Chairman of the Transport
   Committee of the Polish Academy of Sciences),
4. Prof. Danuta Jasińska-Choromańska, PhD, Eng. (Warsaw University
   of Technology),
5. Prof. Lech Grzesiak PhD., Eng. (Warsaw University of Technology,
   Dean of the Electric Engineering Faculty)
6. Prof. Grzegorz Kamiński PhD., Eng. (Warsaw University of
   Technology),
7. Prof. Jarosław Deszczyński M.D., PhD. (Medical University of Warsaw)
8. Prof. Karen Søgaard PhD. (Institute of Sports Science and Clinical Biomechanics, University of Southern Denmark, Denmark),
9. Andrzej Wojciechowski PhD. (Director of Motor Transport Institute),
10. Prof. Andrzej Rudnicki PhD., Eng. (Kraków University of Technology),
11. Adam Szewczyk MSc (Polish Association of Home Builders),
12. Prof. Andrzej Gałęski PhD. (Head of Polymer Physics Department, Center of Molecular and Macromolecular Research of the Polish Academy of Sciences),
13. Prof. Wojciech Wawrzyński PhD., Eng. (Dean of the Transport Faculty of Warsaw University of Technology)
14. Prof. Ingmar Andréasson PhD. (ATRA Industry Group)
15. Prof. Martin Lowson (ULTRA)
16. Fraser Brown (ULTRA Managing Director)
17. David Holdcroft (Director of ATRA Europe, ATRA Industry Group)
18. Maciej Kozłowski PhD, Eng. (Warsaw University of Technology, Faculty of Transport)
19. Martin Pemberton, (Vectus Ltd.)

Conference Program

Day 0 - 23.09.2013

Arrival of Conference Guests

Day I - 24.09.2013

830 Opening of the Conference

900-1100 Innovative systems, constructions and advanced material technologies
Moderator: Prof. W. Włosiński, Prof. Xu Binshi, Prof. W. Choromański,

2. Remanufacturing and recycling as an element of low-resource-consuming economy in automotive industry (Xu Binshi, Zhu Sheng)
3. The Heathrow PRT System (M.V. Lowson, Fraser Brown, David Holdcroft)
4. Man as the subject in designing technical mobility systems (Iwona Grabarek)

Break

1200-1345

Personal Mobility

Moderator: Prof. Karen Søgaard, Prof. Danuta Jasińska Choromańska, Prof. Andrzej Mastalerz,

1. Polish and foreign technical gait-aiding solutions for disabled people (Danuta Jasinska-Choromańska)
2. The use of biofeedback and EMG in rehabilitation and design for prevention of musculoskeletal disorders (Karen Søgaard)
3. Issues regarding disabled people transport – wheelchairs of the new generation (Grzegorz Dobrzyński, Włodzimierz Choromański, Krzysztof Fiok)
4. Innovative manual wheelchair (Krzysztof Fiok, Anna Mróz, Andrzej Mastalerz, Włodzimierz Choromański)

Lunch break

1600-1700

Personal Rapid Transit (I), Eco Car

Moderator: Prof. Włodzimierz Choromański, Fraser Brown

1. PRT – utopia or revolution? Polish PRT System (W. Choromański, G. Kamiński, B. Kamiński, J. Kowara, M. Maciejewski)
2. ECO car – new concept of an urban electric car (W. Choromański, L. Grzesiak, J. Szczypior, B. Ufnalski, I. Grabarek, M. Kozłowski)

1715-1730

Medicine and Mobility

Moderator: Prof. Iwona Grabarek, Prof. J. Deszczyński

1. Expectations regarding technical orthopedic devices designed for fracture treatment and restoring mobility. Polish orthopedic stabilizers and endoprosthesis – polish school? (J. Deszczyński, W. Choromański)
SUPPER
(for the supper semi-casual dress code is advised)

DAY II – 25.09.2013

900-1000
Advanced Material Technologies:
Moderator: Prof. Władysław Wołosiński, Prof. Xu Binshi, Prof. Zhu Sheng

1. New polymeric materials in automotive engineering (Andrzej Gałęski)
2. New possibilities of the obtaining hydroxyapatite coats on implants (Wojciech Żórawski)

1115-1300
POSTER SESSION
Moderator: Prof. Lech Grzesiak, Prof. Danuta Jasińska-Choromańska, Prof. Iwona Grabarek, Prof. Włodzimierz Choromański, Prof. Grzegorz Kamiński

1. A concept of propulsion and power supply systems for PRT vehicles (Bartłomiej Kamiński, Marcin Nikoniuk, Łukasz Drązikowski)
2. An experimental study on the powertrain with a hybrid energy source for an urban electric vehicle (Lech M. Grzesiak, Bartłomiej Ufnalski, Arkadiusz Kaszewski, Marek Michalczuk, Piotr Rumniak, Andrzej Gałęcki, Piotr Biernat)
3. Effect of user's individual features on energy consumption of orthotic robot (Karol Bagiński)
4. Linear asynchrone motors for PRT drive (Adam Biernat, Grzegorz Kamiński, Emil Kupiec, Włodzimierz Przyborowski, Adam Rogalski, Paweł Staszewski)
5. Matching of orthotic robot kinematics, realization of gait for handicapped people (Ksawery Szykiedans, Wojciech Credo, Danuta Jasińska-Choromańska)
6. Mechatronic simulator of lever driven wheelchairs (Krzysztof Fiok, Włodzimierz Choromański, Andrzej Potyński, Grzegorz Dobrzyński)

7. Project, design and tests of in-wheel outer-rotor PMSM motor for electric car application (Jan Szczypior, Rafał Jakubowski, Adam Biernat, Mateusz Rzeszowski)


9. Safety in the system of verticalization and aiding motion of the disabled (Marcin Matyjejewicz- Maciejewicz, Danuta Jasińska- Choromańska, Błażej Kabziński, Dariusz Kołodziej)

10. Simulation studies of PRT vehicle (Maciej Kozłowski, Włodzimierz Choromański)

11. Simulation studies of the ECO-Car handling characteristics (Maciej Kozłowski, Włodzimierz Choromański)

12. Sustainable Transport for Rzeszów city (Wiktor B. Daszczuk, Waldemar Grabski)

13. Analysis of the wheelchair ride comfort during stairs climbing (Grzegorz Dobrzyński, Włodzimierz Choromański)

14. Personal Rapid Transit: design and prototype (Jerzy Kowara, Włodzimierz Choromański)

15. Personal Rapid Transit: simulations and laboratory tests (Włodzimierz Choromański, Jerzy Kowara)

15:00-16:45

PRT (II), Monorail
Moderator: Director Fraser Brown, Prof. Ingmar Andréasson,

1. The Track to Suncheon: Making APMs Intelligent (Martin Pemberton)

2. PRT – History and Future (Fraser Brown)

3. Light Monorail (Bartholet Maschinenbau AG)

4. INNOVIA Monorail (Bombardier)

5. PRT as a complement to other transit modes (Ingmar Andréasson)
17:30-18:00

ROUND TABLE
Joint Projects regarding ECO-Mobility
Moderator: Prof. Władysław Włosiński, Prof. Włodzimierz Choromański

19:30

GALA DINNER (Łańcut Castle)
(for the Gala Dinner informal dress code is advised)

11:00-12:30

Welcome address by the Mayor of Rzeszów Tadeusz Ferenc

1. Expectations of Polish cities to innovative transport on the example of Rzeszów (Mayor of Rzeszów Tadeusz Ferenc, Zbigniew Rudnicki)


3. Announcement of an Initiative for constructing new transport technologies in the city of Rzeszów

Lunch break

15:00-16:30
Bus tour of the city of Rzeszów

The Organizing Committee:

1) Prof. Iwona Grabarek PhD., Eng. (chairwoman)  
   +48 601 228 458, iwonagrabarek@gmail.com
2) Paweł Nowosad MSc (deputy chairman)  
   +48 22 234 61 43, pawel.nowosad@eco-mobilnosc.pw.edu.pl
3) Krzysztof Fiok MSc., Eng.  
   +48 660 423 774, fiok@wt.pw.edu.pl
4) Urszula Krasieńska  
   +48 22 628 64 91
5) Zbigniew Rudnicki Rzeszów

Address for correspondence:  
Warsaw University of Technology, Faculty of Transport, Koszykowa 75  
00-662 Warsaw, POLAND  
ECO-Mobility Project

Place of Conference:

Bristol Tradition and Luxury Hotel  
Address: Rynek 20, 35-064 Rzeszów  
Phone: 17 250 00 50