

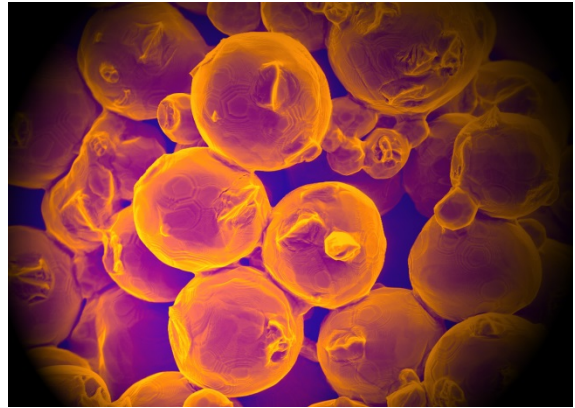
PM Titanium 2015

31 August to 3 September 2015

Lüneburg, Germany

Preliminary programme

Status: 20 August 2015



Sunday, 30 August

11:45 – 18:00 Hiking tour „Lüneburger Heide“, car or bus transfer from Lüneburg

19:00 Welcome reception in “Schröders Garten”, Lüneburg

Monday, 31 August

08:00 Registration

08:30 Welcome

Session Microstructure and Properties

08:50 *Keynote presentation*

Powder Metallurgy Ti-6Al-4V Alloy with Wrought-like Microstructure and Mechanical Properties by Hydrogen Sintering

Zak Fang, University of Utah, USA

09:20 **Increase of fatigue life of titanium VT1-0 after electron beam treatment**

Sergey Konovalov, Siberian State Industrial University, Russia

09:40 **Metal Injection Moulding of Ti-6Al-4V with Yttrium addition**

Wolfgang Limberg, Helmholtz-Zentrum Geesthacht, Germany

10:00 **Sintering Characteristics of Spark Plasma Sintered Binary Titanium-Zirconium Alloy**

Bamidele Lawrence Bayode, School of Chemical and Metallurgical Engineering, Pretoria, South Africa

10:20 **Characterization of Spark Plasma Sintered Cp-Ti Reinforced with Nanosized Ti-Based Ceramics Additives**

Saliou Diouf, Institute for Nano Engineering Research, South Africa

10:40 Refreshments

Session Thermomechanical Processing

- 11:00 *Keynote presentation*
Thermomechanical Consolidation of Titanium, Ti-6Al-4V, TiAl Based Alloy and TiH₂ Powders
Deliang Zhang, Shanghai Jiao Tong University, China
- 11:30 **In-situ formation of TiC/Ti matrix composites by mechanical blending and thermomechanical consolidation of TiH₂-3vol.% CNTs powder**
Yifeng Zheng, Shanghai Jiao Tong University, China
- 11:50 **Powder consolidation of titanium and titanium alloys by a powder compact forging process**
Mingtu Jia, University of Waikato, New Zealand
- 12:10 **Preparation of titanium alloy parts by powder compact extrusion of powder mixture and scaling up the manufacturing**
Fei Yang, University of Waikato, New Zealand
- 12:30 **Processing and characterization of Ti-MMCs reinforced by nano/micro B₄C particles and amorphous boron particles via Direct Hot Pressing**
Isabel Montealegre-Meléndez, Universidad de Sevilla, Spain
- 12:50 Lunch

Session Metal Injection Moulding I

- 14:00 *Keynote presentation*
Titanium Metal Injection Molding - commercial overview
Matthias Scharvogel, Element 22 GmbH, Germany
- 14:30 **Sintering behavior of a metal injection moulded Ti-Nb Alloy for biomedical application**
Dapeng Zhao, College of Biology, Hunan University, China
- 14:50 **Sintering Powder Metal Injection Molded (MIM) Titanium Alloys: In Vacuum or Argon?**
Satyajit Banerjee, DSH Technologies, USA
- 15:10 **New Titanium Alloy Feedstock for High Performance Metal Injection Molding Parts**
Toby Tingskog, AP&C Advanced Powders & Coatings, Canada
- 15:30 **Titanium Metal Injection Molding, A Qualified Manufacturing Process**
Jobe Piemme, Praxis Technology, USA
- 15:50 Refreshments

Session Metal Injection Moulding II

- 16:10 *Keynote presentation*
Development of PEG/PMMA Based Binders for Ti Metal Injection Moulding
Peng Cao, The University of Auckland, New Zealand
- 16:40 **A MIM route for producing Ti6Al4V-TiC composites**
Roger Pelletier, National Research Council of Canada, Canada
- 17:00 **Two-component Metal Injection Moulding of Ti-6Al-4V and Stainless Steel Bi-Material parts**
Marco Mulser, Fraunhofer IFAM Bremen, Germany
- 17:20 **Metal Injection Moulding of titanium medical components**
Vera Friederici, Fraunhofer IFAM, Bremen

Poster session I

- 17:40 *Oral short poster presentation*

Researching on Microstructure Control of SPS Titanium Fiber Porous Materials
Shifeng Liu, Xi'an University of Architecture and Technology, China

Corrosion and tribocorrosion behavior of Ti-alumina composites
Elena Gordo, University Carlos III of Madrid, Spain

Titanium Matrix Composites with High Specific Stiffness
Eric Neubauer, RHP-Technology GmbH, Austria

HIP of near net shape parts from Plasma Atomized Titanium and Nickel base alloys
Toby Tingskog, AP&C Advanced Powders & Coatings, Canada

Evaluation of press-and-sinter processing parameters in titanium hydride powder metallurgy
Sergio Luis Graciano Petroni, Institute of Aeronautics and Space - IAE / Materials Division, Brasil

Realization of a Titanium Spinal Implant with a Gradient in Porosity by 2-Component-Metal Injection Moulding
Ana Paula Cysne Barbosa, Universidade Federal do Rio Grande do Norte – UFRN, Brasil

Influence of oxygen on the fatigue behavior of Ti-6Al-7Nb alloy
Alexandra Amherd Hidalgo, Helmholtz-Zentrum Geesthacht, Germany

Development of Ti₂₂Nb_xZr using Metal Injection Moulding for Biomedical Applications
Anok Babu Nagaram, Helmholtz-Zentrum Geesthacht, Germany

Microstructure and mechanical properties of TiAl alloy consolidated by prealloyed powders

Fantao Kong, Harbin Institute of Technology, China

Processing and characterization of Ti-6Al-4V samples manufactured by selective laser melting

Yadir Torres Hernández, University of Seville, Spain

Development of Ti-MMCs by the use of different reinforcements via conventional Hot-Pressing

Cristina Arévalo, University of Seville, Spain

18:00 Poster session

19:00 Dinner

Tuesday, 1 September

08:00 Registration

Session PM Ti alloys including TiAl

08:30 *Keynote presentation*

Metal injection moulding of superelastic TiNi parts

Efraín Carreño-Morelli, University of Applied Sciences and Arts Western Switzerland, Switzerland

09:00 *Invited presentation*

Microstructures and Mechanical Properties of Ti-43Al-5V-4Nb-Y Alloy Consolidated by Spark Plasma Sintering

Yongjun Su, Shanghai Jiao Tong University, China

09:20 **Creep properties of Ti-48Al-2Cr-2Nb produced by selective electron beam melting**

Vera Juechter, Friedrich-Alexander Universität Erlangen-Nürnberg, Germany

09:40 *Invited presentation*

State of The Art PM Ti Materials with Ubiquitous Light Elements

Katsuyoshi Kondoh, Joining and Welding Research Institute, Osaka University, Japan

10:00 **Processing and characterization of porous Ti₂AlC using space-holder technique**

Jesus Gonzalez-Julian, Forschungszentrum Jülich GmbH, Germany

10:20 **The selection principle of impurity scavengers and the impurity scavenging pathways during sintering of titanium and its alloys**

Yafeng Yang, RMIT University, Melbourne, Australia

10:40 Refreshments

Session Additive Manufacturing I

- 11:00 *Keynote presentation*
Additive Manufacturing of Titanium Alloys – Chances and Possibilities
Claus Aumund-Kopp, Fraunhofer IFAM Bremen, Germany
- 11:30 *Invited presentation*
Mechanical behaviour of gas nitrated Ti-6Al-4V bars produced by selective laser melting
Aamir Mukhtar, TIDA Ltd, New Zealand
- 11:50 **Mechanical properties of Ti-6Al-4V fabricated by electron beam melting**
Alexander Kirchner, Fraunhofer IFAM Dresden, Germany
- 12:10 *Invited presentation*
Towards achieving forged properties for Ti-6Al-4V additively manufactured by selective laser melting
Ma Qian, RMIT University, Melbourne, Australia
- 12:30 **Selective laser melting of Ti-6Al-4V: Influence of process parameters on the microstructure - Numerical simulation with a thermodynamically motivated nucleation and growth model**
Peter Holfelder, Technical University Munich, Germany
- 12:50 Lunch

Session Additive Manufacturing II

- 14:00 *Keynote presentation*
Additive manufacturing of titanium alloys and titanium aluminides by selective electron beam melting
Huiping Tang, State Key Laboratory of Porous Metal Materials, China
- 14:30 **Effects of Surface Modification on Tensile Properties of Ti-6Al-4V Additively Manufactured by Selective Electron Beam Melting**
YingYing Sun, RMIT University, Melbourne, Australia
- 14:50 *Invited presentation*
Advances in Titanium Additive Manufacturing Technologies
Stefan Gulizia, CSIRO Manufacturing Flagship, Australia
- 15:10 **Thermohydrogen Processing of 3D screen printed titanium parts**
Marie Jurisch, Fraunhofer IFAM Dresden, Germany
- 15:30 **Cold spraying manufacturing Ti-alloy parts**
Maria Villa Vidaller, Helmut-Schmidt-Universität, Germany
- 15:50 Refreshments

Session Powder Production

- 16:10 *Keynote presentation*
Novel and Emerging Routes for Titanium Powder Production – An Overview
Ian Mellor, Metalysis Limited, United Kingdom
- 16:40 **Production of Titanium alloy powders for Powder Metallurgy Applications by Using Tekna's Induction Plasma Technology**
Romain Vert, TEKNA, France
- 17:00 **Spherical Ti-6Al-4V powders by gas atomization**
Gang Chen, State Key Laboratory of Porous Metal Materials, China
- 17:20 **Processing TIRO™ powder for strip production and other powder metallurgy applications**
Christian Doblin, CSIRO, Australia

Poster session II

- 17:40 *Oral short poster presentation*
Microstructural Investigation of Routes for Gamma Titanium Aluminides Production by Powder Metallurgy
Vinicius André Rodrigues Henriques, Brazilian Aerospace Center, Brasil
- Microstructure of Ti-45Al- 5Nb and 10Nb powder**
Daniel Laipple, Helmholtz-Zentrum Geesthacht, Germany
- Orthorhombic phase formation in a powder processed Ti-Al-Nb alloy with a nano scale modulated microstructure**
Marcus Willi Rackel, Helmholtz-Zentrum Geesthacht, Germany
- Characterization of Simultaneously Gas Atomized Ti/TiC Composite Powders**
Tzeyang Yeh, Industrial Technology Research Institute, Taiwan
- Rapid Solidification of Ti6Al4V Alloy Powder Produced by PREP Technique**
Ridvan Yamanoglu, Kocaeli University, Turkey
- Electrophoretic deposition of PEEK/45S5 BioGlass® coating on porous titanium substrate: influence of processing conditions and porosity parameters**
Yadir Torres, University of Seville, Spain
- Porous Titanium for biomedical applications: micro-mechanical behavior and numerical simulation**
Yadir Torres , University of Seville, Spain
- A detailed assessment of microwave heating of titanium hydride powder**
YingYing Sun, RMIT University, Australia
- CP Ti fabricated by low temperature extrusion of HDH powder: application in dentistry**
Martin Balog, The Slovak academy of sciences, Slovakia

Shaping strategies for porous Ti fabrication throughout colloidal chemistry

Begoña Ferrari, Institute for Ceramics and Glass, Spain

Processing, Microstructure and High Strain Rate Behaviour of Ti-6Al-4V Alloy Produced From Blended Mixture Using Powder Compact Extrusion

Ajit Pal Singh, University of Waikato, New Zealand

18:00 Poster session

19:00 Dinner

Wednesday, 2 September

08:00 Registration

Session PM Biomaterials

08:30 *Keynote presentation*

Powder Metallurgy of Net-shaped Titanium Implants

Martin Bram, Forschungszentrum Jülich GmbH, Germany

09:00 **Biofunctionalization of porous titanium**

A.C. Alves, CMEMS-UMinho - Center for MicroElectroMechanical Systems, Portugal

09:20 **Mechanical Properties of Cellular Ti-6Al-4V Structures Fabricated by Electron Beam Melting**

Geoff Smith, Callaghan Innovation, New Zealand

09:40 **Design, Processing and Characterization of Materials with Controlled Radial Porosity for Biomedical and Nuclear Applications**

Ernesto Chicardi Augusto, Universidad Técnica Federico Santa María, Chile

10:00 *Invited presentation*

Physical properties of Ti-36Nb-2.0Ta-3.0Zr-0.35O alloy prepared by powder metallurgy

Yong Liu, State Key Laboratory of Powder Metallurgy, Central South University, China

10:20 **Effect of Carburization on In Vitro Corrosion Behavior and Cellular Response of TiAl Alloy**

Hong Wu, State Key Laboratory of Powder Metallurgy, Central South University, China

10:40 Refreshments

Session Cost efficient and specific techniques

- 11:00 *Keynote presentation*
Production of Ti and Ti alloys by pressing and sintering. The low-cost approach
Elena Gordo, University Carlos III of Madrid, Spain
- 11:30 **Spark Plasma Sintering of Titanium Alloys**
Alberto Molinari, University of Trento, Italy
- 11:50 *Keynote presentation*
Titanium Powder Applications for Aerospace Cost Reductions
Ali Yousefiani, Boeing, USA
- 12:20 **Press and sintering of titanium alloys**
Robert Frykholm, Höganäs AB, Sweden
- 12:40 **Development of low cost PM Ti alloys by thermomechanical processing of powder mixtures**
Stella Raynova, The University of Waikato, New Zealand
- 13:00 **Ceramic reinforcement (Ti₃SiC₂) of Ti scaffolds via direct foaming of pre-ceramic polymers**
Esther Molero, Institute for Ceramics and Glass, Spain
- 13:20 Closing words
- 13:30 Lunch

Conference Dinner

- 14:15 Departure to Hamburg (bus transfer), sight seeing
- 17:00 Dinner at “Rickmer Rickmers”
- 20:30 Boat trip through the harbor
- 22:30 Bus transfer to Lüneburg

Thursday, 3 September

Visiting tour

- 08:30 Bus departure visiting tour
- 10:30 **Fraunhofer IFAM**
Bremen
- 12:00 Refreshment
- 14:00 **LZN Laser Zentrum Nord GmbH**
Hamburg-Bergedorf
- 16:00 **Helmholtz-Zentrum Geesthacht**
Geesthacht
- 18:00 Bus departure back to Lüneburg