PM Titanium 2015  
31 August to 3 September 2015  
Lüneburg, Germany  

Preliminary programme  

Status: 22 July 2015  

Sunday, 30 August  
12:00 – 17:00  Hiking tour „Lüneburger Heide“, car transfer from Lüneburg  
19:00  Welcome reception in “Schröder’s 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  Influence of Microstructures on the Mechanical Properties of P/M Ti-6Al-4V Prepared by Hot Isostatic Pressing  
Youngmoo Kim, Agency for Defence Development, Rep. of Korea  
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  Identification of Contamination in the Microstructure of Metal Injection Moulded Titanium
Paul Ewart, ENGCONS and The University of Waikato, New Zealand

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

17:40  

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

Wolfgang Limberg, Helmholtz-Zentrum Geesthacht, Germany

Poster session I

18:00  

*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

- **Sintering behavior of a metal injection moulded Ti-Nb Alloy for biomedical application**
  Dapeng Zhao, College of Biology, Hunan University, China
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

18:20 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
Efrain 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 nitrided 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  Considerations for the Direct Production of Pre-Alloyed Titanium Powder
David van Vuuren, CSIR, South Africa

17:20  Spherical Ti-6Al-4V powders by gas atomization
Gang Chen, State Key Laboratory of Porous Metal Materials, China

17:40  Continuous production of Titanium-Boron alloy powders
Christian Doblin, CSIRO, Australia

Poster session II

18:00  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

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

A detailed assessment of microwave heating of titanium hydride powder  
YingYing Sun, RMIT University, Australia

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

18:20 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
Todd Morton, 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 (Ti$_3$SiC$_2$) 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)
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
15:30  Helmholtz-Zentrum Geesthacht
Geesthacht
18:00  Back in Lüneburg