

Workshop

Powder Treatments and Alloys for 3D Printing



☑ OpP3D – A CORNET PROJECT

3D printing of metallic parts by powder bed techniques use dedicated powders in different materials. Those powders have defined characteristics that will influence the parts manufacturing process as well as the final parts properties such as mechanical strength or electrical conductivity. This workshop will answer the following questions:

> *Is it possible to improve the final performances of the produced parts by modifying the raw materials (powders) characteristics?*

> *What are the available techniques to modify those powders?*

> *How to optimise the process reliability and efficiency by choosing the right composition of powders and the right process parameters?*

The workshop will present the state of the art in terms of additive manufacturing processes and raw materials, but also the latest developments obtained during a European project called OpP3D. The results of this project will be presented at the workshop by the four scientific partners.

REGISTRATION 10.00

Introduction 10.30–10.40

Additive manufacturing and OpP3D: Technical challenges and project aims

1st Presentation 10.40–11.10 + 10' discussion

Indutherm | Powder production for additive manufacturing

2nd Presentation 11.20–11.50 + 10' discussion

Unicorn Engineering | Electric motor construction: new possibilities offered by 3D printed copper coils

☪ LUNCH BREAK 12.00–13.00

3rd Presentation 13.00–13.30 + 10' discussion

MateriaNova | Powder treatment by the magnetron sputtering technique and applications

4th Presentation 13.40–14.10 + 10' discussion

Fraunhofer UMSICHT | Non-metallic coatings on Cu powders from liquid, gaseous and vapor phase media

5th Presentation 14.20–14.50 + 10' discussion

sirris | 3D-printed parts and process reliability: Development approach on metallic powders thematic

6th Presentation 15.00–15.30 + 10' discussion

fem | Processability of Cu and Cu-alloys with laser beam melting: Influence of powder coating and alloying elements

7th Presentation 15.40–16.00 + 10' discussion

Needs for materials in powder bed based additive manufacturing: Introducing the OpP3D follow-up project

GET TOGETHER 16.15–17.00

📍 LOCATION

fem

Katharinenstraße 17
73525 Schwäbisch Gmünd
Germany

📄 GET YOUR TICKET TODAY

Registration is possible by email until April 20th, 2018:

gerhard.wolf@umsicht.fraunhofer.de | www.umsicht-suro.fraunhofer.de

Registration fee per person: 50 €

Further information is available on request and after registration

🏨 HOTEL

Hotel rooms for an overnight stay can be booked under special conditions (booking code »fem-17«) at the **Hotel am Remspark**, Remspark 1, 73525 Schwäbisch Gmünd, Telephone +49 7171 7988200

RESEARCH PARTNER



The fem, Research Institute for Precious Metals and Metal Chemistry in Schwäbisch Gmünd, deals with various issues of material and surface technology. We are specialized in precious metals and galvanic surface treatment. Other priorities are corrosion, analytics, light metals and coating layers, physical and chemical layer depositions, material physics as well as material and layer characterization.

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To ensure their growth, businesses develop new products, directly brought about by technological innovations, on an ongoing basis. These innovations are the fruit of long years of research led by the university sphere. Strengthened by its internationally-recognised expertise, the University of Mons in Belgium has created MateriaNova, a unique-in-Europe research and development centre. Its speciality? The development of innovative materials.

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Fraunhofer Institute for Environmental, Safety, and Energy Technology: Our know-how covers technical innovations in the fields of environmental, material, process and energy technology. Our objective is the advancement of sustainable economies, environmentally friendly technologies and innovative approaches. Our wish: to improve the standard of living and to promote the innovation capacity of the economy.

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Sirris helps companies develop, test and effectively implement technological innovations. In working with our experts, you will tap their knowledge and experience, while using our high-tech infrastructure to explore the full range of possibilities offered by new technologies. This will help you make the right technological choices and rapidly turn your innovations into marketable products and services.

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THE RESEARCH WAS CONDUCTED IN COOPERATION WITH THE FOLLOWING INDUSTRIAL PARTNERS

Indutherm Gießtechnologie GmbH, Walzbachtal/Germany **NMD New Materials Development GmbH**, Laufen-Leobendorf/Germany **Arnd Sauter GmbH**, Hornberg-Niederwasser/Germany **3D-LASER GbR**, Kirchheim unter Teck/Germany **HMW Hauner Metallische Werkstoffe**, Röttenbach/Germany **Unicorn Engineering GmbH**, Schwäbisch Gmünd/Germany **Ionics SA**, Liers/Belgium **Advanced Coating SA**, Liege/Belgium **Laser Coating Diamond Technology**, Marcinelle/Belgium **Euro Heat PIPE SA**, Nivelles/Belgium **ADDIPARTS sprl**, Mons/Belgium **SAGITA SA**, Wandre/Belgium **Any-shape SA**, Gosselies/Belgium **Diarotech**, Gilly/Belgium **Hoganas SA**, Ath/Belgium **Calyos SA**, Nivelles/Belgium **Geonx SA**, Gosselies/Belgium

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