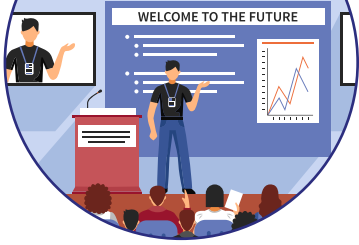


**What is an Industry Corner Meeting?**

- A 20-minute presentation on innovations or technological breakthroughs.
- At the end of the presentation, participants will have the opportunity to ask questions for 10 minutes.

**Free access for all World PM2022 participants**
**Industry corner area in the Exhibition**

The World PM2022 Mobile App will also show the details of Industry Corner Meetings enabling you to add them to your onsite schedule.



## The EWF personnel qualification scheme in metal AM

SPEAKER
**Mrs Ana Beatriz Lopez** (AFS-Association Française du Soudage)

Monday 10 October 2022, 12:45-13:15

The IAMQS, International Additive Manufacturing Qualification System, was created by industry and for industry to ensure that companies and professionals are equipped with the right set of skills to implement AM/ 3D printing at the industrial level. It currently offers 11 Qualifications in Additive Manufacturing, covering Operators, Coordinator, Engineers, Designers and Supervisor. The speech will show a comprehensive summary of the Qualifications of personnel.

## Materials developed for Additive Manufacturing

SPEAKER
**Dr Solange Vives** (Aubert & Duval)

Monday 10 October 2022, 13:30-14:00

Aubert & Duval will present superalloys and high-performance steels powders adapted for Additive Manufacturing processes. High temperature, corrosion resistance, high strength materials are difficult to process. Our work on crack reduction for these advanced materials during LPBF process will be highlighted as well as specific material properties.

## New challenges for high performance rare earth permanent magnets

SPEAKER
**Mr Gérard Delette** (CEA-LITEN)

Monday 10 October 2022, 16:15-16:45

Sintered Nd-Fe-B magnets are the most powerful magnets produced by industry and enable considerable improvement of the compactness, yield and reliability of electrical machines. The demand for such magnets is rapidly growing (15-20 % per year) for the deployment of electrical vehicles and wind turbines. However, the sustainability of magnet production involves upscaling new manufacturing routes combining (i) a rational use of raw critical elements, (ii) more material saving by net shape process to avoid scraps and machining loss and (iii) large scale recycling of end-of-life products in an efficient value chain. Maintaining the performances of magnets to a high level, compliant with the motor design requirements, raises new challenges in the research activities focused on these materials. Some recent results obtained on the powder metallurgy platform hosted by CEA-LITEN will be described. The roadmap for the development of manget manufacturing industrial pilot line will be presented.

## Sustainable Energy Harvesting Systems Based on Innovative Mine Waste Recycling

SPEAKER
**Dr Filipe Neves** (START)

Tuesday 11 October 2022, 12:45-13:15

START, an innovation action project supported by the European Union (EU) and its Horizon Europe programme, aims to create a sustainable supply chain for green energy harvesting products based on the concept of converting mining waste into materials for waste heat recovery. The speech will show a comprehensive summary of the project, highlighting the importance of powder technology for the proposed technological solutions.

## BASF Catamold® – Inject your ideas

SPEAKER
**Dr Maik Schlesinger** (BASF SE)

Tuesday 11 October 2022, 13:30 -14:00

Get to know the inventor and the leading supplier of ready-to-mold catalytic debinding Metal Injection Molding (MIM) feedstocks, Catamold®. BASF's Metal Systems team develops, produces and markets a high-quality range of innovative and sustainable MIM feedstocks for the Automotive, Information & Communication Technology and Functional applications.

## SMC materials for E-Mobility Application

SPEAKER
**Ph. D Zhou Ye** (Höganäs AB)

Tuesday 11 October 2022, 16:15 -16:45

There are many applications of soft magnetic material in an EV. The working temperature of soft magnetic components in these applications can be varied from -40°C up to over 200°C. It is necessary to have not only a stable performance of the magnetic components under the working temperature, but also a good thermal durability in the applications. This presentation will make a short summery of SMC potential applications in E-mobilities and introduce the SMC performances at difference working temperature and its thermal durability

## Global markets for metal Additive Manufacturing

SPEAKER
**Mr Matthias Schmidt-Lehr** (AMPOWER GmbH & Co. KG)

Wednesday 12 October 2022, 10:15-10:45

Presentation of the market overview of metal Additive Manufacturing based on the AMPOWER Report.

## New Cemented Carbide Grades for Improved Performance in Erosive and Corrosive Environments for Oil and Gas Applications

SPEAKER
**Dr Olivier Lavigne** (Hyperion Materials and Technologies)

Wednesday 12 October 2022, 12:45-13:15

Hyperion Materials & Technologies has many years of experience in providing solutions to improve productivity within upstream oil & gas applications like drilling, completions, and production. Hyperion's cemented carbides offer erosion resistance superior to that of steel and Co-Cr superalloys as well as fracture toughnesses higher than those of ceramic materials like silicon carbide and aluminum oxide. Hyperion also serves as a partner to its customers during the design phase of new product development, working together to optimize cost without sacrificing functionality.

One of Hyperion's most recent innovations; tailored to the needs of the energy industry; was the development of two new cemented carbide grades, DZ07 and CR9C. These new grades support the evolution of new product designs in directional drilling, inflow control, hydraulic fracturing, and production choke flow control applications. These new, high-performance tools, that drive increased productivity, require improved material corrosion,erosion resistance, and toughness properties. Combining our core technical expertise in materials development with ability to simulate application performance in a lab setting was fundamental to the development of these two industry-leading grades, which have exhibited outstanding performance in a wide range of new products ranging from intelligent completions sleeves to various flow control valve components.

## FAST/SPS: A NEW industrial post-process for the full densification of 3D complex shapes from additive manufacturing!

SPEAKER
**Mr Romain Epherre** (NORIMAT)

Tuesday 11 October 2022, 13:30 -14:00

Spark Plasma Sintering (or Field Assisted Sintering Technique) is an efficient powder densification technique. It is used to sinter a wide variety of materials (ceramics, metals, alloys, composites, etc.). Compared to conventional processes, it reduces the production time by 90% while enhancing material performance. The presentation will be split in two sections:

3D COMPLEX SHAPES:

Norimat has opened the gateway to a new hybrid technology, through developing a unique and simple process which enables the consolidation of 3D complex shapes. It allows the full densification (porosity <1%) of the green parts created by additive manufacturing, in only one additional post-process step, this taking less than 1h of thermal treatment time.

ENGEMINI: 1st modeling software for FAST/SPS

A software suite dedicated to the FAST/SPS process has been developed to help its users understand, develop, industrialize and produce new materials and parts using SPS. The applications target all users from R&D (Digital Twin) through to Production (Statistical Process Control)..

## Product innovation driven by multi-material additive manufacturing

SPEAKER
**Dr Xiaoshuang Li** (Aerosint SA)

Wednesday 12 October 2022, 16:15 -16:45

The Selective Powder Deposition system developed by Aerosint SA disruptively change the way how powder patterns and beds can be formed. This system also allows the simultaneous deposition of multiple powders to form a thin layer. The different powders can have different patterns. In combination with the consolidation processes such as laser powder bed fusion, binder jetting, it allows additively manufacturing of multi-material parts. As a result, products with multiple functions integrated can be manufactured by a single process. Since it is still a new technology in the market, decision makers from various industry sectors need to be informed with it and brainstorm the product innovation driven by this technology.

The goal of this proposed industry corner meeting is to gather industry users from diverse business sectors and to review together how product can be innovated by using multi-material additive manufacturing.

## Laboratory and in-line PM parts fast Non-Destructive Testing Control

SPEAKER
**Dr Mihai Iovea** (Accent Pro 2000 s.r.l.)

Thursday 13 October 2022, 10:15-10:45

First we propose a general discussion about the Non-destructive Techniques used for PM parts quality analysis. Then, we present an implemented high-resolution belt-based X-Ray Digital Radiography technique (based on using a TDI - Time Delay Integration X -Ray detector) for detecting internal defects, combined with a Laser dimensional profiler for in-line measuring 3D external shape of the parts . The parts are continuously traveling on belt with speed up to 10cm/s and are successively measured by laser profiler and X-ray techniques. By combining both NDT techniques in one equipment could be automatically measured with ± 1.5-3% errors, the following parameters: External dimensions, local thickness, local density and internal defects type and size. The entire process takes around 20-80 seconds, depending on sample size, and could be fully controlled by computer which finally decides if sample is Good or Bad. For internal defects fast classification, a Learning algorithm could be adapted for fast automate database generation and permanent improvement of defects detection algorithm.

## Implementation of alloying design for the development of sustainable materials

SPEAKER
**PhD Eleonora Bettini** (Sandvik Additive Manufacturing)

Thursday 13 October 2022, 12:45-13:15

Advanced calculation tools have been used and implemented in the development of new sustainable alloys for metal injection molding (MIM) and Additive Manufacturing (AM). Two examples will be presented.

Several Information and Communication Technology (ICT) components are commonly manufactured by MIM. However, the increasing size of new smartphones together with the addition of multiple cameras is a real challenge when trying to limit the total weight of the device. To overcome this problem, the use of advanced computational tools has been implemented in the development of a new Ni-free Low Density alloy, with high strength, hardness and sintered density, without compromising ductility.

Maraging steels are very versatile alloys due to the possibility of achieving different harness-toughness levels by aging their martensitic structure at different temperatures and aging times. The very low amount of carbon makes these alloys suitable for laser powder bed fusion (L-PBF). However, maraging steels commonly contain high amount of Co, which has been recently strictly regulated due to its health & environmental hazards. For this reason, alloying design using advanced calculation tools has been implemented to develop a Co-free maraging steel, with comparable properties to one of the most common, but Co-containing, maraging steel (18Ni300).