



MAM 2018

Study Days

ADDITIVE MANUFACTURING: Challenges and New Developments

4 - 5 - 6 December 2018, Milan

Aula Magna Carassa-Dadda
Bovisa – Politecnico di Milano

Organized by
RINA and Dipartimento di Meccanica - Politecnico di Milano

DIPARTIMENTO DI MECCANICA





AIMS

In its 3rd year, Master Additive Manufacturing - MAM assesses the future challenges and the new development opportunities at the heart of Italian industry in Milan.

The 2018 Master classes are held at the Politecnico di Milano organized in collaboration with the Department of Mechanical Engineering of the prestigious Milanese institute. Within the 3-day schedule, additive manufacturing prospects will be analysed with a specific attention on the allocation of these processes in a larger production chain.

A unique set of experts from academia and the industry will showcase the new trends as well as industrial case studies.

You are warmly invited to join MAM 2018 between 4th and 6th December 2018 in Milan.

ADDRESSED TO

Managers, technical experts, researchers and students.

ORGANIZERS/SUPPORTERS

The course is organized by RINA and Dipartimento di Meccanica - Politecnico di Milano with the support of OICE (Associazione delle Organizzazioni Italiane di Ingegneria, Architettura e Consulenza tecnico-economica), AITA (Associazione Italiana Tecnologie Additive), AFIL (Associazione Fabbrica Intelligente Lombardia).

SCIENTIFIC COMMITTEE

Guido Chiappa, *RINA*

Dante Pocci, *RINA*

Barbara Previtali, *Politecnico di Milano*

Bianca Maria Colosimo, *Politecnico di Milano*

COURSE DIRECTOR

Dante Pocci, *RINA*

CONTACT US

Beatrice Cappa - beatrice.cappa@rina.org

Roberta Valle - roberta.valle@rina.org

Elisabetta Amici - elisabetta.amici@rina.org

cell: +39 335 6682147

REGISTRATION FEE

Full fee:

600,00 Euro (+VAT) Full fee including lunch, teaching material and social dinner.

Reduced fee:

540,00 Euro (+VAT) Fee with discount including lunch, teaching material and social dinner). This fee is valid for registration by 31 October 2018, for members of OICE, AITA, AIL and for multiple registrations.

Student fee:

300,00 Euro (+VAT) Student fee including lunch, teaching material and social dinner.

Travel, dinner and hotel accommodation are not included

REGISTRATION

Registration can be made online on the Rina.org website or through the registration form which can be downloaded from the website: <https://www.rina.org/en/mam-2018>, and sent to mam-add@rina.org.

4 December - 1st day

BUSINESS MODELS AND CUSTOMER RELATIONSHIP

Chair Stefano Lionetti, RINA

09.30 - 9.45 **Welcome**

Marco Bocciolone, *Direttore Dipartimento Meccanica del Politecnico di Milano*

09.45- 10.00 Guido Chiappa, *RINA*

ADDITIVE MANUFACTURING : DISRUPTIVE PROFILE AND STATE OF THE ART

10.00 -10.30 **Is Additive Manufacturing disruptive?**

Dante Pocci, *RINA*

10.30 - 11.00 **Strategic Intelligence for AM: taking decisions today for future developments**

Federico Meneghello, *RINA*

11.00 - 12.00 *Coffee break & Demo*

12.00 - 12.45 **Additive manufacturing technologies: state of the art and trends**

Davide Sher, *SmarTech Markets Publishing*

12.45 - 13.45 *Lunch*



BUSINESS MODELS AND CUSTOMER RELATIONSHIP

13.45 - 14.15

Case n.1

Mauro Antolotti, *Beamit*

14.15 - 14.45

Case n.2

Giulio Canegallo, Sonia Ferrioli, *BHGE - Nuovo Pignone Tecnologie*

14.45 - 15.15

Case n.3

Benedetto Gallo, *Ansaldo Energia*

15.15 - 15.45

Coffee break

15.45 - 16.15

Case n.4

Pasquale Corrado, *MBDA*

16.15 - 16.45

Case n.5

Daniele Drigo, Daniele Liuzzi, *Avio*

16.45

Wrap up

5 December - 2nd day

ADDITIVE MANUFACTURING: KEY ENABLING TECHNOLOGY INDUSTRY 4.0

Chair Guido Chiappa, RINA

- 09.30 - 10.00 **Design for Additive Manufacturing: exploiting lattice structures**
Serena Graziosi, Monica Bordegoni, *Politecnico di Milano*
- 10.00 - 10.30 **Lightweight & functional design for AM**
Massimiliano Gobbi, Andrea Bernasconi, *Politecnico di Milano*
- 10.30 - 11.00 **Modelling & Simulation for AM materials**
Oriana Tassa, *RINA*
- 11.00 - 11.30 *Coffee break*
- 11.30 - 12.00 **Opportunities and challenges of big data analysis in AM: in-situ process monitoring and control and zero-defect manufacturing**
Bianca Maria Colosimo, Marco Grasso, *Politecnico di Milano*
- 12.00 - 12.20 **Computer tomography for process qualification and control of metal AM**
Stefano Petró, *Politecnico di Milano*
- 12.20 - 12.40 **In situ non destructive evaluation and test of metal AM**
Michele Carboni, Francesco Pascucci, *Politecnico di Milano*
- 12.40 - 13.00 **Probabilistic fatigue life assessment of additive manufacturing components**
Stefano Beretta, *Politecnico di Milano*
- 13.00 - 14.00 *Lunch*

5 December - 2nd day

ADDITIVE MANUFACTURING: TRENDS

- 14.00 - 14.30 **Trends in AM process and equipment**
Ali Gökhan Demir, Politecnico di Milano
- 14.30 - 15.00 **Trends in Materials development (steels and superalloys)**
Laura Alleva, RINA, Ettore Anelli, Franchini Acciai
- 15.00 - 15.30 **Trends in Materials development (Ti and Al- alloys)**
Maurizio Vedani, Riccardo Casati, Politecnico di Milano
- 15.30 - 16.00 **AM technologies for metal: Metal printing innovation**
Massimiliano Annoni, Politecnico di Milano
- 16.00 - 18.00 **Visit AddMe.Lab (Dipartimento Meccanica- Polimi)**
- 18.00 **"Aperitivo in Dipartimento"**
- 20.30 **Social Dinner**

6 December - 3rd day

CHALLENGES ADDITIVE MANUFACTURING

Chair Oriana Tassa, RINA

Powder Metallurgy

09.30 - 10.00 **Utilization and recycling of metallic powder**

Stefania Cacace, Quirico Semeraro, *Politecnico di Milano*

10.00 - 10.30 **Experiences and case history**

Valentina Vicario, *MIMETE*

10.30 - 11.00 **Experiences and case history**

Roberto Sorci, *RINA*

11.00 - 11.30 *Coffee break*

Integration with Machining, Hot Isostatic Pressing

11.30 - 12.00 **Hybrid additive-subtractive machine: l'alleanza GFM-DMG Mori Seki**

Fancesco Stortiero, *GFM*

12.00 - 12.30 **The use of Hot Isostatic Pressing (HIP) in the AM Technologies**

Antonio Magnacca, *Bodycote*

12.30 - 13.30 *Lunch*



From characterization to Certification

- 13.30 - 14.00 **Characterization of AM component for Pressure Equipment**
Andrea Tonti, *INAIL*
- 14.00 - 14.30 **Geometrical product specification and verification in additive manufacturing**
Giovanni Moroni, *Politecnico di Milano*
- 14.30 - 15.00 **The process qualification of the components in the packaging sector**
Fabrizio Casadei, *Ecor International*
- 15.00 - 15.30 **Guidelines for the certification of metallic parts made by additive manufacturing**
Stefano Lionetti, *RINA*
- 15.30 - 16.00 *Question time*
- 16.00 *Wrap up*

Printed November 2018

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