

Preliminary program

MAM 2018

Study Days

ADDITIVE MANUFACTURING: Challenges and New Developments

4 - 5 - 6 December 2018

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*

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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>, <https://www.rina.org/it/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 -10.50

Additive Manufacturing is disruptive?

Dante Pocci, *RINA*

10.50 - 11.20

Coffee break

11.20 - 12.20

Additive manufacturing technologies: state of the art and trends (tbc)

Barbara Previtali, *Politecnico di Milano*

12.20 -12.45

Question time

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, *BHGE - Nuovo Pignone Tecnologie*

14.45 - 15.15

Case n.3

Alessio Andolfi, Massimiliano Maritano, *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, *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 **Lightweight & functional design for AM**
Massimiliano Gobbi, Andrea Bernasconi, *Politecnico di Milano*
- 10.00 - 10.30 **Modelling & Simulation AM material**
Oriana Tassa, *RINA*
- 10.30 - 11.00 **Opportunities and challenges of big data analysis in AM: toward zero-defect manufacturing**
Bianca Maria Colosimo, *Politecnico di Milano*
- 11.00 - 11.30 *Coffee break*
- 11.30 - 12.00 **In-situ process metrology, monitoring and control of metal AM**
Marco Grasso, Bianca Maria Colosimo, *Politecnico di Milano*
- 12.00 - 12.30 **Computer tomography for process qualification and control of metal AM**
Stefano Petrò, *Politecnico di Milano*
- 12.30 - 13.00 **In situ non destructive evaluation and test of metal AM**
Michele Carboni, *Politecnico di Milano*
- 13.00 - 14.00 *Lunch*

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 (steel and superalloys)**
Laura Alleva - RINA
- 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 AddmeLab (Dipartimento Meccanica- Polimi)**
- 18.00 **“Aperitivo in Dipartimento”**
- 20.00 **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

6 December - 3rd day



From characterization to Certification

- 13.30 - 14.00 **Characterization of AM components in the O&G sector**
Roberto Morana, *BP*
- 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*

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With the support of

