

- 8:30 **Welcome coffee & Registration of attendees**
- 9:00 **Opening ceremony**
Welcome from the Organizing Committee and from the Director of the Department of Mechanical and Industrial Engineering (Prof. L.E. Zavanella)
- 9:30 **Keynote lecture**
Current state of semisolid processing
Prof. A. Jarfors - Jönköping University, Sweden

MATERIAL DEVELOPMENT AND CHARACTERIZATION I

Chairperson: Ahmed Rassili

- 10:10 **A comparasion of microstructure, casting defects and die soldering of rheocasting and thixocasting AL-7si-0.3mg based alloy**
S2P_054
J. Li, I. Spacil - Montanuniversität Leoben, Austria
J. Winklhofer, F. Hofstätter, S. Griesebner - SAG Business Improvement GmbH, Austria
- 10:30 **Fatigue properties of thixoformed Al-6wt%Si-2.5wt%Cu**
S2P_006
E. J. Zoqui - University of Campinas, Brazil
W. L. Beil - Federal Institute of Education, Science and Technology, Brazil
- 10:50 Coffee break - photo taking

MATERIAL DEVELOPMENT AND CHARACTERIZATION II

Chairperson: Frank Czerwinski

- 11:20 **Mechanical and microstructural investigations on a symmetric mould processed with Semi-Solid Aluminum Rheometal™: analysis of the as cast properties**
S2P_029
V. Magrin, F. Bonollo - Università di Padova, Italy
Z. Li, A. E. W. Jarfors - Jönköping University, Sweden
- 11:40 **A comparative study on microstructure, mechanical property, and electrical conductivity of Al-7Si-0.6Mg alloy produced by high pressure die casting and semisolid die casting**
S2P_035
J. Feng, S. Chen, D. Li - GRINM Group Co., Ltd., China - GRIMAT Engineering Institute Co., Ltd., China
S. Zhu, Y. Sui - Kunming University of Science and Technology, China

12:00 **Preliminary investigation on the use of recycled A356 alloy for semi solid processing**
S2P_059
A. Mantelli, L. Girelli, L. Montesano, A. Pola - University of Brescia, Italy
R. Arcaleni, L. Tonelli - University of Bologna, Italy

12:20 Lunch

MATERIAL DEVELOPMENT AND CHARACTERIZATION III

Chairperson: Annalisa Pola

14:00 **Variation of Semi-Solid microstructure and mechanical properties of Mg98.5Ni0.5Y1.0 alloy with solidification pressure**
S2P_002
S. Wu, S. Lü, X. Yang, W. Guo - Huazhong University of Science and Technology, China

14:20 **Heat-treatment characteristics and structure-property relationships of thixomolded AZ91 and ultralight LAZ771 Magnesium alloys**
S2P_003
T.C. Su, T.Y. Lai, Y.Y. Kuo, S.Y. Hu - National Taiwan University, Taiwan

14:40 **Evolution of microstructure and mechanical properties of the rheo diecast Mg-12Gd-3Y-1Zn-0.4Zr alloy during heat treatment**
S2P_034
D. Li, J. Feng - GRINM Group Co., Ltd., China - GRIMAT Engineering Institute Co., Ltd., China
Z. Chang, L. Peng, Y. Wu - Shanghai Jiao Tong, University, Shanghai, China

15:00 **Development of high-performance semi-solid magnesium alloy and large thixomolding machine**
S2P_068
L. Gu, J. Wang, X. Zeng - Shanghai Jiao Tong University, China
J. Deng, S. Fan - BOLE Intelligent Machinery Co., China

15:20 Coffee break

SEMISOLID SLURRY PREPARATION AND PROCESSING TECHNOLOGIES I

Chairperson: Johannes Winklhofer

15:50 **On the liquid portion composition deviation in the rheometal process**
S2P_004
A. E. W. Jarfors - Jönköping University, Sweden

16:10 **A Study on microstructure and properties of aluminum alloy bracket produced by a new semi-solid rheo-diecasting process**
S2P_062
S. Chen, D. Li - GRINM Group Co. - GRIMAT Engineering Institute Co. - General Research Institute for Nonferrous Metals, China
F. Zhang, J. Feng, F. Zhang, - GRINM Group Co. - GRIMAT Engineering Institute Co., China

- 16:30
S2P_036 **Flow length influence of cores made of high-temperature composite in semi-solid AZ91 produced in Thixomolding**
A. Schilling, C. Schütz, A. P. Fros, M. Fehlbier - University of Kassel, Germany
- 16:50
S2P_032 **Microstructure design of semi-solid slurry for metal direct writing**
Z. Li, X.G. Hu, H.X. Lu, Q. Zhu - Southern University of Science and Technology, China
- 17:10 End of the first day

MATERIAL DEVELOPMENT AND CHARACTERIZATION IV

Chairperson: Mario Rosso

- 9:30
S2P_026 **Influence of reinforcement particle parameters on the homogeneity of particle distribution in semi-solid formed aluminium matrix composites**
M. Speth, K. R. Riedmüller, M. Liewald - University of Stuttgart, Germany
- 9:50
S2P_039 **Microstructure Evolution during Cooling slope Rheoprocessing of novel Al-15Mg₂Si-4.5Si composite**
P. Das - Indian Institute of Science, India
- 10:10
S2P_057 **Abrasive Wear Properties Evaluation of the Thixoformed A380/NbC Composite**
B. Edu Arendarchuck, L. A. Lourençato, H. D. Carvajal Fals - Federal University of Technology of Paraná, Brazil
- 10:30
S2P_005 **Semi-Solid casting of AlN reinforced Mg-Matrix composites and their thermophysical properties**
L. Chen, J. Qin, J. Li, S. Lü, W. Guo, S. Wu - Huazhong University of Science and Technology, China
- 10:50 Coffee break

SEMISOLID SLURRY PREPARATION AND PROCESSING TECHNOLOGIES II

Chairperson: Anders Wollmar Jarfors

- 11:20
S2P_001 **Impact of processing conditions on the fluidity and consistency of GISS processed Semi-Solid aluminum alloys**
S. P. Midson - Colorado School of Mines, USA
X. Liang, H. Yao, A. Wei - Ningbo IKD Semi-solid Technology CO., China
- 11:40
S2P_014 **High speed roll casting of Al-5%Mg strip at semisolid condition**
T. Haga, K. Yamazaki - Osaka Institute of Technology, Japan
S. Nishida - Gunma University, Japan
- 12:00
S2P_024 **Quality control of semi-solid die casting by filling pressure based on machine learning method**
Z. Wang, X.G. Hu, H.X. Lu, Q. Zhu - Southern University of Science and Technology, China
- 12:20 Lunch

MATERIAL DEVELOPMENT AND CHARACTERIZATION V

Chairperson: Steve Midson

- 14:00
S2P_031 **Liquid-induced heat treatment for eliminating the anisotropy in mechanical properties of laser additive manufactured IN718 alloy**
F. Zhou, X.G. Hu, Z. Li, Q. Zhu - Southern University of Science and Technology, China
- 14:20
S2P_040 **A molecular dynamics study of nucleation and grain growth of novel Al-15Mg2Si-4.5Si composite during rapid cooling based semi solid slurry preparation**
I. Mukherjee, P. Das - Indian Institute of Science, India
- 14:40
S2P_071 **Effect of ingate length on microstructure and properties of Semi Solid squeeze casting CuSn10P1 Alloy**
Y. Li, Z. Li, Q. Wang, L. Xie, L. Zhang, R. Zhou, H. Xiao - Kunming University of Science and Technology, China
- 15:00 Coffee break

MATERIAL DEVELOPMENT AND CHARACTERIZATION VI

Chairperson: Ahmed Rassili

- 15:30
S2P_011 **Comparison of solidification microstructure evolution of Al-10Si and recycled aluminium beverage can strips made in a strip caster**
A. De Padua Lima Filho, L. Veronez Goulart Ferreira, P. Barbosa de Oliveira Neto, R. A. Nunes de Oliveira - Unesp-São Paulo State University, Brazil
F. Hois - Technische Universitaet Wien (TU Wien), Austria
M. Borodiak - Votorantim Metais/Companhia Brasileira de Alumínio, Brazil
- 15:50
S2P_025 **Characterisation of residual stresses of rheocast Al alloy**
E. Fracchia, M. Actis Grande - Polytechnic of Turin, Italy
I. Gattelli - Fonderia Gattelli Srl, Italy
- 16:10
S2P_055 **Effect of Mn additions on microstructure, mechanical properties and die soldering of Rheocasting Al-7Si-0.3Mg based alloys**
J. Li, I. Spacil - Montanuniversität Leoben, Austria
J. Winklhofer, F. Hofstätter, S. Griesebner - SAG Business Improvement GmbH, Austria
- 17:30 [Guided city tour](#)
- 20:00 [Conference dinner at "La Sosta"](#)

ECONOMIC ASPECTS AND INDUSTRIAL APPLICATIONS I

Chairperson: Qiang Zhu

- 9:30
S2P_030 **An Application of Injection Molding to Semisolid Processing of Metallic Alloys: A Role of SIMA in Feedstock Transformation**
E. Czerwinski - CanmetMATERIALS, Canada
- 9:50
S2P_023 **Gas Induced Superheated Slurry: industrial applicability, energy savings and sustainability in die casting**
T. Botter - Mambretti Tech, Italy
Y. He - 2GISSCO Co. Ltd., China
J. Wannasin - Prince of Songkla University, Thailand
D. Schiavon - Costampress, Italy
S. Paramento - Sira Group, Italy
A. Mambretti - Mambretti Metalli, Italy
- 10:10
S2P_052 **Performance and fundamental differences between rheocast and high-pressure vacuum die cast Al-Si-Mg alloys**
E. Breton - Rio Tinto Alcan, Canada
J. Fourmann - Rio Tinto Alcan, USA
P. Jansson - Comptech i Skillingaryd AB, Sweden
- 10:30
S2P_019 **New addressable applications for Rheocasting to escape from an over-supply market**
E. Niklas - Casting-Campus GmbH, Switzerland
- 10:50 Coffee break

ECONOMIC ASPECTS AND INDUSTRIAL APPLICATIONS II

Chairperson: Jiehua Li

- 11:20
S2P_061 **Producing structural high integrity castings with minimum carbon footprint with the comptech-rheocasting process**
M. Hartlieb, P. Jansson - Comptech AB, Sweden
J. Tawil, S. Bergeron - Dynatool Industries, Canada
- 11:40
S2P_066 **From Thixo to Rheo, the 90's and 2000's decades: glories, hardships and current situation of semi-solid processes in Italy**
M. Rosso - INSTM-Politecnico di Torino, Italy
- 12:00
S2P_073 **A novel vacuum semi-solid dosing concept for high quality HPDC parts of tomorrow**
S. Frank, L. Kiessling, A. Betz - LKR Leichtmetallkompetenzzentrum Ranshofen GmbH, Austria
R. Burgstaller, A. Harrison, R. Rapp - MELTEC Industrieofenbau GmbH, Austria
- 12:20
S2P_072 **Thixocasting 2.0: from dhyps to darts with MAXImolding® reactor attachment for semi-solid slurry generation and dosing**
E. Meyer, A. Stone - MAXImolding! Technology GmbH, Germany
- 12:40 Lunch

RHEOLOGY, MODELLING AND SIMULATION I

Chairperson: Annalisa Pola

- 14:00
S2P_058 **Thixomolding of magnesium – Efficient process industrialization by combining a digital twin and systematic casting trials**
H. Bramann, H. Rockmann, Y. Zhang, S. Yandamuri - MAGMA GmbH, Germany - YIZUMI Germany GmbH, Germany
- 14:20
S2P_028 **On the possibility of replacing Scheil-Gulliver modelling with machine learning and neural network models**
Z. Li - Comptech i Skillingaryd AB, Sweden - Jönköping University, Sweden
H. Tan, L. Lattanzi, A. E.W. Jarfors - Jönköping University, Sweden
P. Jansson - Comptech i Skillingaryd AB, Sweden
- 14:40
S2P_037 **Rheological Modeling of 7075 Aluminum Alloy Semi-Solid Slurry and its Application in the Simulation of SEED Rheocasting Process**
H. Lu, X. Meng, N. Bunnareaksathya, Q. Zhu - Southern University of Science and Technology, China
- 15:00 Coffee break

RHEOLOGY, MODELLING AND SIMULATION II

Chairperson: Marialaura Tocci

- 15:30
S2P_041 **CALPHAD optimization of the composition of EN AC-46000 secondary alloy for semi-solid casting processes**
S. Ferraro, A. Bongiovanni - Università di Torino, Italy
I. Suarez Lopez - 2A spa, Santena, Italy
M. Palumbo, M. Baricco, A. Castellero - University of Turin, Italy - National Interuniversity Consortium of Materials Science and Technology (INSTM), Italy
- 15:50
S2P_007 **Rheological behaviour of semi-solid Al-Si-Cu alloys produced by ECAP**
L. Vanderlei Torres - Federal Institute of Education, Science and Technology, Brazil
C. T. Weishaupt Proni, E. J. Zoqui - University of Campinas, Brazil
- 17:30 [Guided city tour](#)
- 20:00 [Conference dinner at "La Sosta"](#)

RHEOLOGY, MODELLING AND SIMULATION III

Chairperson: Michael Modigell

- 9:30
S2P_050 **Rheological behaviour of secondary AlSi7Mg alloy for semi-solid processing**
M. Tocci, A. Pola – Università di Brescia, Italy
M. Modigell - German University of Technology in Oman (GUtech), Oman
- 9:50
S2P_009 **Numerical simulations of the squeeze flow of thixotropic semisolid slurries**
G. C. Florides, G. C. Georgiou - University of Cyprus, Cyprus
M. Modigell - German University of Technology in Oman, Oman
E.J. Zoqui - University of Campinas, Brazil
- 10:10
S2P_010 **Semi-solid deformation behavior, microstructure of GH3536 superalloy and numerical simulation of thixotropic forging process for disc component**
M. Huang, J. Jiang, Y. Wang - Harbin Institute of Technology, China
- 10:30
S2P_044 **Comparison of rheological models to simulate die filling process of A356 semisolid alloy**
G. Sanjuan-Sanjuan, Á. E. Chavez-Castellanos - Universidad Nacional Autónoma de México, México
I. J. Ramírez-Calera - Universidad UniverMilenium, México
- 10:50 Coffee break

SEMISOLID SLURRY PREPARATION AND PROCESSING TECHNOLOGIES III

Chairperson: Jufu Jiang

- 11:20 **Venting systems in semisolid processing of aluminium**
S2P_018 M. Pammer - Montanuniversität Leoben, Austria
P. Hofer-Hauser - Österreichisches Gießerei-Institut, Austria
P. Jansson - Comptech AB, Sweden
P. Schumacher - Montanuniversität Leoben, Austria - Österreichisches
Gießerei-Institut, Austria
- 11:40 **Study on processing conditions for semi-solid forging of magnesium**
S2P_021 **alloys**
S. Furuta, H. Nakagawa, T. Tanaka - Doshisha University, Japan
M. Sasada, S. Nishida, S. Yasuhara, H. Ueno - Gunma University, Japan
- 12:00 **Insert molding of aluminum alloy A7075 and alumina plate by semi**
S2P_022 **solid forging**
S. Yasuhara, H. Ueno, S. Okubo, Y. Otake, S. Nishida - Gunma University,
Japan
S. Furuta, T. Tanaka, M. Sasada - Doshisha University, Japan
T. Haga - Osaka Institute of Technology, Japan
- 12:40 Lunch
- 12:30-
13:30 Scientific committee meeting
- 14:30 [Visit to Idra group](#)
- 17:00 Closing of the Conference

THIS IS A PRELIMINARY PROGRAMME

Possible changes may still occur to titles, authors and scheduling.

GENERAL INFORMATION

Conference venue

The Conference will be held in in Brescia, Campus of Engineering (Via Branze 38 – 25124 Brescia).

Language

The official language of the Conference will be English.

Proceedings

The full texts of all accepted papers will be published, after single-blind peer-review, in Solid State Phenomena (<https://www.scientific.net/SSP/Details>), indexed in the main databases (Scopus,...).

Registration Information

REGISTRATION FEES

ALL ABOVE REGISTRATION FEES ARE REVENUE STAMP INCLUDED

STANDARD (by August 28, 2023)	AIM member	NON member
Chairperson / Committee member	€ 590,00	€ 680,00
Delegate	€ 800,00	€ 890,00
Sponsor	€ 650,00	€ 740,00
Student **		€ 570,00 22% VAT included

All registration fees are revenue stamp included, except for the students fees, which are VAT included

Additional ticket for the social event for accompanying persons: (includes only the social event on September 7)	€ 90,00 plus 22% vat
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LATE AND ON-SITE (from August 29, 2023)	AIM member	NON member
Chairperson / Committee member	€ 640,00	€ 730,00
Delegate	€ 850,00	€ 940,00
Sponsor	€ 650,00	€ 740,00
Student **		€ 570,00 22% VAT included

We consider speaker (presenter) one author for each paper, the other authors shall register as regular participants.

Each registered speaker can present a maximum of two papers. **Over 2 papers, speakers are requested to pay an additional fee of 100 € (vat included) for each paper.**

Speakers failing to register or to pay by the deadline, will not be included in the program and their paper will not be published.

** Students (either speaker or delegate) will have to provide valid proof of student status to avail of the reduced student fee. If speakers, they will have to register by 30 April 2023.

Conference Registration Fees include:

- admittance to technical sessions and to the exhibition
- social event on September 7, 2023
- coffee breaks
- lunches

For non-members (students excluded) the fee includes AIM Membership for the last quarter of 2023 and for the year 2024.

Social event

In order to give delegates the opportunity to meet informally, AIM organized a Conference dinner in the evening of September 7, 2023, at the restaurant *La Sosta*, via S. Martino della Battaglia, 20, Brescia, anticipated by a guided tour of the city center of Brescia.

TIMETABLE

WEDNESDAY 6 SEPTEMBER 2023 – ROOM “SALA CONSILIARE”

8:30	Welcome coffee & Registration of attendees
9:00	Opening ceremony
9:30	Keynote lecture
10:10	MATERIAL DEVELOPMENT AND CHARACTERIZATION I
10:50	Coffee break - photo taking
11:20	MATERIAL DEVELOPMENT AND CHARACTERIZATION II
12:20	Lunch
14:00	MATERIAL DEVELOPMENT AND CHARACTERIZATION III
15:20	Coffee break
15:50	SEMISOLID SLURRY PREPARATION AND PROCESSING TECHNOLOGIES I
17:10	End of the first day

THURSDAY 7 SEPTEMBER 2023

ROOM “SALA CONSILIARE”

ROOM N.8

9:30	MATERIAL DEVELOPMENT AND CHARACTERIZATION IV	ECONOMIC ASPECTS AND INDUSTRIAL APPLICATIONS I
10:50	Coffee break	
11:20	SEMISOLID SLURRY PREPARATION AND PROCESSING TECHNOLOGIES II	ECONOMIC ASPECTS AND INDUSTRIAL APPLICATIONS II
12:40	Lunch	
14:00	MATERIAL DEVELOPMENT AND CHARACTERIZATION V	RHEOLOGY, MODELLING AND SIMULATION I
15:00	Coffee break	
15:30	MATERIAL DEVELOPMENT AND CHARACTERIZATION VI	RHEOLOGY, MODELLING AND SIMULATION II
17:30	Guided city tour	
20:00	Conference Dinner	

FRIDAY 8 SEPTEMBER 2023 – ROOM “SALA CONSILIARE”

9:30	RHEOLOGY, MODELLING AND SIMULATION III
10:50	Coffee break
11:20	SEMISOLID SLURRY PREPARATION AND PROCESSING TECHNOLOGIES III
12:20	Lunch
12:30 - 13:30	Scientific committee meeting
14:30	Visit to Idra Group
17:00	Closing of the Conference