ICRF 2014
2nd International Conference

INGOT CASTING
ROLLING & FORGING

Milan · Italy, 7-9 May 2014

Advanced programme

Organised by
ASSOCIAZIONE ITALIANA DI METALLURGIA

Patronized by
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www.aimnet.it/icrf2014.htm
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Cooperating organizations
- Austrian Society for Metallurgy and Materials
- Brazilian Metals and Materials Association
- Centro Nacional de Investigaciones Metalúrgicas
- Centre de Recherches Métallurgiques
- The Chinese Society for Metals
- Croatian Metallurgical Society
- Czech Steel Federation
- DVM, German Association
  for Materials Research and Testing
- Fédération Française de l’Acier
- Hungarian Mining & Metallurgical Society
- The Institute of Materials, Minerals and Mining
- International Stainless Steel Forum
- The Iron and Steel Institute of Japan
- Jernkontoret
- The Minerals, Metals & Materials Society
- Société Française de Métallurgie et de Matériaux
- Steel Institute VDEh
About ICRF

In 2009, AIM organized the 1st International Conference Hot Forming of Steels & Product Properties, in Grado. Three years later, the Steel Institute VDEh held the 1st International Conference Ingot Casting, Rolling & Forging, in Aachen.

These two successful experiences induced AIM to organize the 2nd ICRF, that will provide a forum for researchers and manufacturers involved in the scientific and technical developments of ingot casting production, from conventional ingot casting to the remelting processes, to obtain improved steel cleanliness.

ICRF2014 will also focus on rolling and forging technologies: rolling manufacturers, forge masters and end-users will present current and future challenges for steelmakers, as well as new developments in forming technology, simulation and testing.

This meeting is aimed at creating an opportunity for a technical exchange at an international level among the numerous experts involved in the specific and strategic hot forming production route: steelmakers and producers of semis (ingots, blooms, billets etc.), forming operators, designers of plastically formed products, research centers and laboratories engaged in quality control and in innovation activities.

The decision to include the entire technological route is intended to favor a fruitful discussion and interaction among the different realities, and it will offer a good opportunity to improve quality, performance, efficiency, safety qualification procedures and the preparation of reference standards for hot forming process and plastically deformed products.

During the Conference, thanks to the cooperation with Siderweb.com, the attendees will have the opportunity to follow a session devoted to market issues, called “Steel Market Outlook”. 

Wednesday, 7 May 2014

Room VOLTA

OPENING SESSION

Chairperson: Carlo Mapelli
- Politecnico di Milano, Italy

9.00 Welcome addresses by:
AIM President
Dr. Jacopo Guzzoni - Conference Chairman

9.40 Steel applications and challenges in the power generation Industry
M. Manning - GE Power & Water, USA

10.10 Electroslag Remelting of large ingots: characterization of hot topping morphology and prediction of defects evolution during forging by finite elements simulation
V. Vicario, F. Malagoli - FOMAS Group, Osnago, Italy

10.40 Design and application of an advanced fast rolling model with through thickness resolution for heavy plate rolling
J. Lohmar, M. Bambach, G. Hirt
- RWTH Aachen University, Germany
S. Seuren - AG der Dillinger Hüttenwerke, Dillingen/Saar, Germany

11.00 Coffee break offered by

ROLLING & FORGING

Open Die Forging

Chairperson: Paolo Ferro
- Università di Padova/Vicenza, Italy

11.40 Effect of aluminum nitride on the hot ductility of as-cast forging ingots
B. Connolly - Ellwood Quality Steels and University of Pittsburgh, USA

12.00 Analytic and experimental study of pre-forging heating process of big dimensions steel blocks
A. Dal Santo, M. Longin - Siderforgerossi, Arsiero, Italy
P. Ferro, F. Bonollo - Università di Padova - DTG, Vicenza, Italy

12.20 New developments for ingots of alloyed steel and alloys forging between four dies on open-die forging presses
V. Lazorkin, D. Lazorkin - FDforging Ltd., Zaporozhye, Ukraine

12.40 Lunch

www.aimnet.it/icrf2014.htm
Wednesday, 7 May 2014

Room VOLTA

ROLLING & FORGING
Simulation 1
Chairperson: Bruno Buchmayr
- Montanuniversität Leoben, Austria

14.10 The effect of forging and heat treatment conditions on the service life expectancy of a component working at high temperature and high pressure
L. Casiraghi, A. Corsi, G. Merckling, G. Billi - RTM Breda, Cormano, Italy
D. Suzzani - Bassi Luigi & C., S. Rocco al Porto, Italy

14.30 A sigma particles dissolution model with application to duplex and superduplex stainless steels forged components
P. Ferro, F. Bonollo - Università di Padova - DTG, Vicenza, Italy
M. Longin - Siderforgerossi, Arsiero, Italy

14.50 Optimization of the quality of heavy plates through the mastery of the modelisation of deformation
L. Coudreuse, B. Pierre, Y. Jan - Industeel Loire, ArcelorMittal, France
I. Poitroux, J. Dairon - Industeel CRMC, ArcelorMittal, Le Creusot, France

15.10 Application of Finite Element Analysis considering the complex tool kinematics of axial-profiling and dishing in ring rolling
G. Schwich, J. Seitz, G. Hirt - RWTH Aachen, Germany
V. Jenkouk - University of Cambridge, United Kingdom

15.30 Design and optimisation of closed die counter blow forging process by finite element method
C. Gorwade, D. Legge, S. Hassan, A. Smith - Sheffield Hallam University, United Kingdom
B. Hanson, L. Saunders, D. Hall - Chapmans Agricultural Ltd., United Kingdom

INGOT CASTING
Simulation 1
Chairperson: Silvia Barella
- Politecnico di Milano

16.20 CFD modelling of macro-segregation and shrinkage in large diameter steel roll castings using an active heating technology
L. Nastac - The University of Alabama, Tuscaloosa AL, USA
K. Marsden - Whemco Inc., Pittsburgh PA, USA

16.40 Nb microsegregation and redistribution during casting and forging in Al-free case hardening steel
S. Konovalov, U. Prahl - RWTH Aachen, Germany

17.00 Casting and solidification parameters optimization of large forging ingots
S. Barella, C. Di Cecca, A. Gruttadauria, C. Mapelli, D. Mombelli - Politecnico di Milano, Italy

17.20 Effect of solidification microstructure on the formation of channel segregation in the steel ingot
Y. Yamashita - Nippon Steel & Sumitomo Metal Corporation, Ibaraki, Japan

17.40 Optimization of the filling and solidification of large ingots
K. Marx, S. Rödl - VDEh - Betriebsforschungsinstitut, Düsseldorf, Germany
S. Schramhauser, M. Seemann - Buderus Edelstahl, Wetzlar, Germany

18.00 End of the first day

Room VERDI

14.10 STEEL MARKET OUTLOOK by

siderweb.com
Thursday 8 May 2014

Room VOLTA

INGOT CASTING
Remelting 1
Chairperson: Gabriele Rampinini
- Forgiatura A. Vienna, Italy

9.00 Electric current distribution in the ESR process and its relation to the ingot surface quality
A. Kharicha, E. Karimi Sibaki, M. Wu, A. Ludwig - University of Leoben, Austria

9.20 Simulation of solidification and fluid flow behaviour in the ESR process for industrial scale ingots
N. Giesselmann, A. Rückert, H. Pfeifer - RWTH Aachen, Germany
J. Tewes, J. Klöwer - Outokumpu VDM, Germany

9.40 Large ESR forging ingots and their quality in production
P. Bettoni, A. Paderni - ASO Siderurgica, Ospitaletto, Italy
H. Scholz, U. Biebricher, H. Franz - ALD Vacuum Technologies, Hanau, Germany

10.00 Increase of the forging ingot mass-how far
L. Medovar, G. Stovpchenko, A. Sybir - Elmet-Roll, Kyiv, Ukraine

10.20 Introducing an analytic approach on air gap formation during the ESR / VAR process and numerical validation
M. Eickhoff, N. Giesselmann, A. Rückert, H. Pfeifer - RWTH Aachen, Germany
J. Tewes, J. Klöwer - Outokumpu VDM, Germany

11.00 The impact of processing parameters associated with hot rolling of thin slabs for high strength-high toughness combination niobium-microalloyed steels
D. Misra - University of Louisiana, Lafayette, USA

11.30 Optimized roll-materials for the hot rolling of high strength alloys
H. Zunko, S. Zinner - Böhler Edelstahl GmbH & Co KG, Kapfenberg, Austria

11.50 High-performance cutting facilities for increasingly large material cross sections
G. Richter - BRAUN Maschinenfabrik GmbH, Vöcklabruck, Austria

12.10 Rolling of HE390 D grade with high strength low alloy steel
S. Pourmostadam - Mobarakeh Steel Company, Estahan, Iran

12.30 Customised handling in forging and heat treatment
R. Dango - Dango & Dienenthal Maschinenbau GmbH, Siegen, Germany

12.50 Lunch

ROLLING & FORGING Technology
Chairperson: Marco Roveda
- Siemens, Italy

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12.50 Lunch
Thursday 8 May 2014

Room VOLTA

**INGOT CASTING**
Additives & refractories development
**Chairperson:** Reinhard Fandrich
- Stahlinstitut VDEh, Germany

**14.20** Discussion of fly ash compared to synthetic mould powders – time for change?
L. Hallgren, C-Å. Däcker
- Swerea KIMAB AB, Sweden
L. Teng - Royal Institute of Technology, Sweden

**14.40** Experience from plant trials with improved mould powder at Uddeholms AB
M. Svensson, E. Sjöqvist Persson - Uddeholms AB, Hagfors, Sweden
L. Hallberg, C-Å. Däcker - KIMAB, Sweden

**15.00** Ingot feeding systems: analysis of fibers’ behaviour before/after casting
F. Sola - Jodovit, Lonate Pozzolo, Italy
C. Mapelli, D. Mombelli - Politecnico di Milano, Italy

**15.20** High-quality refractories for high-quality steel
W. Schoenwelski, K. Ruwier, S. Foellbach, J. Sperber - Steuler-KCH GmbH, Hoehr-Grenzhausen, Germany

**15.40** Recent developments and new challenges on refractory materials and on shape design for Hollowware

**16.00** Coffee break

**16.30** A parameter study on the effect of slag electric conductivity on the solidification of a large scale ESR ingot
E. Karimi Sibaki, A. Kharicha, M. Wu, A. Ludwig - University of Leoben, Austria
H. Holzgruber, B. Ofner, M. Ramprech - INTECO Special Melting Technologies GmbH, Bruck/Mur, Austria

**16.50** Quality and efficiency of ESR ingots production
L. Medovar, V. Petrenko, S. Artem, G. Stovpchenko - Elmet-Roll, Kyiv, Ukraine

**17.10** State of the art in VAR and ESR processes – A comparison
A. Paderni, P. Bettoni - ASO Siderurgica, Ospitaletto, Italy

**17.30** The behavior of inclusions during ESR remelting
E. Sjöqvist Persson - Uddeholms AB, Hagfors, Sweden
H. Fredriksson - KTH, Sweden
A. Mitchell - UBC

**19.00-22.30** SOCIAL EVENT
Cocktail and visit to the “Last supper” by Leonardo Symphony Concert at Basilica of Sant’Ambrogio
Thursday 8 May 2014

INNOVATIVE MATERIALS & APPLICATIONS

Chairperson: Valentina Vicario
- FOMAS Group, Italy

Programme:

9.00 Experience in manufacture and behaviours of high chromium forged rotor steels
A. Di Gianfrancesco, S. Budano, P. Lombardi, M. Paura - Centro Sviluppo Materiali, Roma, Italy
S. Neri, M. Calderini - Società delle Fucine, Terni, Italy

9.20 The effect of nitrogen on the hot strength of high nitrogen steels
R. Ritzenhoff, M.M. Gharbi, V. Diehl, A. Hahn - Energietechnik Essen GmbH, Essen, Germany

9.40 Laser welding simulation on ITER TF coil Double Pancake
F. Lucca, A. Marin, M. Marconi, M. Manzoni, S. Beretta, F. Viganò - L.T. Calcoli, Merate, Italy
A. Foussat - ITER Organization, St. Paul lez Durance Cedex, France

10.00 Technology of high-strength wire obtaining of corrosion resistant steels
L.A. Maltceva, N.N. Ozerets, T.V. Maltceva, A.V. Levina, V.A. Sharapova - URFU, Yekaterinburg, Russia

10.20 Advanced radial forging machines from SMS Meer
P-J. Nieschwitz - SMS Meer GmbH, Moenchengladbach, Germany

10.40 Coffee break

ROLLING & FORGING

Measurement & Testing

Chairperson: Giovanni Fantini
- M&M Forgings, Italy

Programme:

11.10 Study on the microstructure influence in ultrasonic test in duplex forged components
S. Barella, C. Di Cecca, A. Gruttadauria, C. Mapelli, D. Mombelli - Politecnico di Milano, Italy
C. Panezi Da Rocha, T. Strohaecker - Universidade Federal do Rio Grande do Sul, Porto Alegre, Brazil
G. Fantini, M. Guarneri - M&M Forgings, Cividate Camuno, Italy

11.30 Aging effect on 15-5PH ESR steel
R. Sola, P. Veronesi, G. Poli - Università degli Studi di Modena e Reggio Emilia, Italy
S. Ferrari - Acciaieria di Rubiera, Italy

11.50 Investigation on the final microstructure and mechanical properties of S355 steel plates produced by three hot rolling methods
R. Abdideh, M. Hizombor, B. Ehdasai - Khouzestan Oxin Steel Co., Ahvaz, Khouzestan, Iran

12.10 Automatic ultrasonic testing of heavy-duty premium steel bars
W. Deutsch - KARL DEUTSCH Pruf- und Messgerätebau GmbH + Co KG, Wuppertal, Germany
F. Hippenstiel, D. Jung, R. Jungermann - BGH Edelstahl Siegen GmbH, Siegen, Germany

12.30 Dimensional control during forging: innovative 3d laser measuring system
E. Libralesso, A. Gaspari, E. Guerra - Tecnogamma (Mermec Group), Italy

12.50 Lunch
ROLLING & FORGING
Simulation 2
Chairperson: Andrea Corsi
- RTM Breda, Italy

14.20 Analysis of pore closure in open die forging by experimental and numerical simulation
D. Rosenstock, A. Melzner,
G. Hirt - RWTH Aachen University, Germany

14.40 Innovative approach to calculate lamination curves in ring rolling operations through simulation
A. Sartori - Muraro, Italy
P. Lasne - Transvalor S.A., France
M. Gabrielli - Enginsoft, Italy

15.00 Process chaining approach with simulation: from cast ingot to final properties of forged component
L. Valente, C. Viscardi - Ecotre, Brescia, Italy

15.20 Numerical simulation of a shell forming, from hollow ingot to the final product, with a powerful software tool
O. Jaouen, F. Costes, P. Lasne,
C. Fourment, M. Barbelet - Transvalor S.A., Mougins, France

15.40 Quality prediction with combined simulation of ingot casting and forging
I. Hahn, M. Schneider - Magma Gießereietechnologie GmbH, Aachen, Germany
H. Schaafsall, C. Barth - Simufact Engineering GmbH, Germany

16.00 Coffee break

INGOT CASTING
Simulation 2
Chairperson: Michele Formentelli
- M&M Forgings, Italy

16.30 Characterization and forecasts of solidification structures and macrosegregations in heavy steel ingots
I. Poitrault, A. Gingell - Industeel ArcelorMittal, Le Creusot, France
M. Zaloznik, H. Combeau, N. Leriche - Nancy-Université, Ecole des Mines de Nancy, France
C. David - Sciences Computers Consultants, Saint Etienne, France

16.50 Minimisation of ingot cast product defects through improved mould geometry
P. Patil, R. Nalawade - Bharat Forge Ltd., Pune, India
G. Balachandran, V. Balasubramanian - Kalyani Carpenter Special Steels Ltd., Pune, India

17.10 Integrated temperature and degassing modeling for ingot casting meltshop
S. Lachmann - Schmiedewerke Gröditz, Germany
B. Kleimt, M. Schlautmann - VDEh-Betriebsforschungsinstitut Düsseldorf, Germany

17.30 Numerical simulation of macrosegregation in steel ingot with non orthogonal grids
W. Tu, H. Shen, B. Liu - Tsinghua University, Beijing, China

19.00-22.30
SOCIAL EVENT
Cocktail and visit to the “Last supper” by Leonardo Symphony Concert at Basilica of Sant’Ambrogio
Friday 9 May 2014

Room VOLTA

INGOT CASTING
Remelting & Technology
Chairperson: Led Medovar - Elmet-Roll, Ukraine

8.50 Lifetime-extension of ingot casting molds
D. Brach, R. Deike - University of Duisburg-Essen, Germany
O. Koeser, B. Kalkunte - Calcom ESI, Switzerland

9.10 Characteristic of the new VIM X-eed® Unit from SMS Mevac
C. Demirci, M. Hüllen, M. Thiehofe, M. Neumann - SMS Mevac, Essen, Germany

9.30 Secondary metallurgy for vacuum tank degasser and vacuum ingots casting
C. Schrade - Tenova Technometal, Duisburg, Germany
K. Shoop - TenovaCORE, Coraopolis PA, USA

9.50 Latest vertical casting solutions
F. Wimmer - Siemens VAI Metals Technologies GmbH, Linz, Austria

10.10 Production experience of ingots from 80 to 120 ton at Breitenfeld Edelstahl
F. Schneller, W. Speirizhoffer, R. Schlager, G. Kortal - Breitenfeld Edelstahl AG, Mitterdorf Im Mürztal, Austria

10.30 Production of heavy forging ingots up to 250 tons via the ESR process - Operational experiences and process optimization methods
M. Kubin, A. Scheriau, M. Knabl, H. Holzgruber - Inteco Special Melting Technologies GmbH, Bruck An Der Mur, Austria

10.50 Coffee break

NOTE ON THE PROGRAMME
This programme is a preliminary programme. It is not definitive and it may be slightly modified: title and authors, cancelled or added papers, chairperson, timetable or duration, etc. Possible changes in the programme will be communicated before the beginning of the Conference.
GENERAL INFORMATION

Conference Venue
The Conference will be held in Milan, at Palazzo delle Stelline - Corso Magenta, 61 (http://www.stelline.it). Palazzo delle Stelline, an ancient 15th century structure, is an oasis of peace and tranquility, right in the heart of Milan. Close to some of the most important monumental areas of the city it will allow to easily reach the areas involved in the activities that made Milan the economic capital of the country.

Accommodation
Updated information on accommodation is available on the Conference website: www.aimnet.it/icrf2014.htm

Language
The official language of the Conference will be English.

Proceedings
The full text of the accepted papers will be published in the CD-Rom proceedings and issued to attendees on arrival at the Conference.

REGISTRATION INFORMATION

<table>
<thead>
<tr>
<th>Registration fees</th>
<th>revenue stamp included</th>
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<tbody>
<tr>
<td><strong>Standard fees (NON members)</strong></td>
<td></td>
</tr>
<tr>
<td>Regular participant:</td>
<td>850 €</td>
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<tr>
<td>Speaker/Session chairperson:</td>
<td>690 €</td>
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<tr>
<td>Student: (*)</td>
<td>390 €</td>
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<th><strong>AIM member fees</strong></th>
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<td>Regular participant:</td>
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<td>Speaker/Session chairperson:</td>
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<td>AIM junior members:</td>
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<td>Accompanying person: (includes only the social event – May 8, 2014)</td>
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</tbody>
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Conference Registration fees include admittance to technical sessions, Conference bag with CD-Rom proceedings, coffee breaks, lunches and the social event organized in the evening of Thursday 8 May. For non-members the fee includes AIM Membership for the last three quarters of 2014 and for the year 2015.

(*) Students will have to provide valid proof of student status. Student registration fee includes access to technical sessions, Conference bag with CD-Rom proceedings, coffee breaks and lunches. The social event (8 May) is **not** included in the student registration fee.

Payment and remittance
- by credit card online (www.aimnet.it/icrf2014.htm);
- by bank transfer, to the order of Associazione Italiana di Metallurgia - AIM at “Banca Popolare Commercio e Industria” (UBI Banca), Branch no. 2 - Via Borgogna 2/4 - 20122 Milano/Italy, account no. 000000022325 – cod. ABI 05048 - CAB 01602 - cin L, IBAN: IT92L0504801602000000022325, swift code BLOPIT22. The transfer order must specify the name of the attendee and the reference “ICRF 2014”. A copy of the transfer order must be sent to AIM, together with the Registration Form.
Speakers registration
Please be aware that only papers submitted on time and with speaker regularly registered before February 28, 2014 will be included in the final programme and published in the Conference proceedings. Registration forms will not be processed without payment. A maximum of two papers will be considered for each speaker registered in time.

Co-authors, who wish to attend the Conference, will have to pay full registration fee.

Advanced registration
If you plan to attend, please register online at: www.aimnet.it/icrf2014.htm or fill-in the enclosed Registration Form and send it to the Conference Secretariat at your earliest convenience, but not later than April 11, 2014.

Please use a separate form for each participant.

For further information, please contact the Conference Secretariat by e-mail, if possible.

Cancellation and refund policy
A refund, less 20% deduction for administrative costs, will be issued for written cancellations received by April 22, 2014. For attendees who notify their cancellation after April 22, 2014 or will not attend the conference, a charge of 100% of the conference fee will be withheld and a copy of the proceedings will be sent after the event.

Insurance
The Conference Secretariat cannot assume any responsibility for personal accident, loss or damage to the private property of participants and accompanying persons, which may either occur during or arise from the conference. Participants should therefore take whatever steps they consider necessary as regards insurance.

Visa Application Form
If you need an official invitation please send your request to the Conference Secretariat before April 7, 2014 complete with family and first name, birth date, passport number, arrival and departure dates, nationality and Italian Embassy fax number.

It’s important that you ask directly to the Embassy which documents are necessary to apply for visa.

ICRF 2014 for Exhibitors and Sponsors
As an integral element of the event, the Conference will feature an exhibition, consisting of Table Top units that will enable excellent exposure for products, technologies, innovative solutions or services. At this opportunity the Organizers will set an area strategically located as regards the main Conference rooms.

Companies will be able to reinforce their participation and enhance their corporate identification by taking advantage of benefits offered to them as Contributing Sponsors of the Conference. The detailed sponsorship packages are available on the Conference website: www.aimnet.it/icrf2014.htm.

For further information please refer to the Conference Secretariat (aim@aimnet.it).

Social programme
AIM is pleased to offer the following social programme in the evening of Thursday 8 May 2014.

19.00-21.00 Cocktail on the terrace by the Leonardo’s botanic garden.

During the cocktail, the first 200 registered participants will be accompanied in groups of 25 people to visit the “Last supper” by Leonardo. Each visit will last 15 minutes, according to the strict regulation imposed by the Ministry of Culture.

21.15-22.30 Symphony concert at the Basilica of Sant’Ambrogio – Johannes Brahms – symphony nr. 1 op. 68 in do minore.
Milan
Milan is the powerhouse of Italy; it produces 10% of the country’s GNP; 25% of domestic research, it is home to 10 universities and every year it attracts over 4 million tourists. The Romans called it “Mediolanum” due to its position at the centre of the main communication routes of the time. Today, it is still one of Europe’s most accessible and welcoming cities: 200 destinations linked by 364,000 flights a year, 380 hotels with over 21,000 guest rooms. An immense system that comprises not only manufacturing, but also services, culture, entertainment, art, cinema, television, NGOs, fashion, sport and research. Milan has ancient origins; it was the capital of the Western Roman Empire and boasts a unique, world-famous artistic heritage, of which the best known is Leonardo da Vinci’s Last Supper. Today the international centre of fashion and design, and a shopper’s paradise, Milan is a vibrant, trendy city, brimming with things to do and with a constantly changing scenario of clubs, bars and restaurants. All this against a truly enviable backdrop, Lombardy: dotted with charming cities of art, it is the region with the greatest expanse of natural parks and magnificent lakes - such as Lake Como - surrounded by mountains that attract numerous hikers and skiers. Without forgetting the rich flavours of Lombardy’s internationally renowned foods and wines. All this just over two hours from Venice, Florence and Genoa.

Travel information
How to reach Palazzo delle Stelline
by PLANE
Milano has two main international airports: Linate airport and Malpensa airport and an additional one, Orio al Serio, mainly popular for low cost airlines.
For information about Malpensa, Linate and Orio shuttles: www.malpensashuttle.it
From the Airport of Linate: take bus 73 departing from the piazza of the airport and exit at the end of the line, in piazza San Babila; take the Metropolitana MM1 in the direction of Fiera/Rho, exit to the stop for Cadorna Triennale, turn into piazza Cadorna, turn into via Carducci and continue to the first traffic light, crossing corso Magenta, Hotel Palazzo delle Stelline awaits you at number 61.
From the Airport of Malpensa: take shuttle train “Malpensa Express” and reach the head of the line at Milano Cadorna, turn into piazza Cadorna, turn into via Carducci and continue to the first traffic light, crossing corso Magenta, Hotel Palazzo delle Stelline awaits you at number 61.
by TRAIN
Arriving at the Central Station of Milan, or at the station Porta Garibaldi, take the Metropolitana (underground) MM2 in the direction of Abbiategrasso and exit to the stop for Cadorna Triennale, turn into piazza Cadorna, turn into via Carducci and continue to the first traffic light, crossing corso Magenta, Palazzo delle Stelline awaits you at number 61.
Milano Centrale Railway Station: Piazza Duca d’Aosta, 1 - 20124 Milano.
For information: www.trenitalia.com
by CAR
From the northern highway (A4 Torino/Venezia; A9 Como/Chiasso; A8 Varese), after the tollbooth, continue in the direction of Milan and take the exit Milano Certosa, go to the end of viale Certosa, cross two crossings and merge into corso Sempione, at the exit of the corso turn right on via Canova, at the end of the via turn right in via Pagano, after 200 m turn left in via Monti until reaching the crossing with corso Magenta, turn right and reach number 61, where you are welcomed to Palazzo delle Stelline.
From highway A1 (Bologna), after the tollbooth, turn into the exit of piazzale Corvetto, turn right and you will arrive at piazzale Bologna, turn left through via Bacchiglione continue 100 m and turn right on corso Lodi. After 700 m, reaching porta Romana, turn left on via Filippetti (inner beltway), continue along viale Beatrice d’Este, viale Gian Galeazzo, viale d’Annunzio, viale Papiniano, viale of Porta Vercellina, arriving at piazzale Baracca, turn right, where at number 61 you are welcomed to Palazzo delle Stelline.
From highway A7 (Genova): after the tollbooth, turn into the western tangential in the direction of Venice, exit at Milano Certosa and continue as indicated above.
REGISTRATION FORM

Please complete and return this form by April 11, 2014

To register please fill in the following registration form in all its parts.
(It is also possible to register online – www.aimnet.it/icrf2014.htm)

Please use BLOCK letters throughout form (photocopies can be used)

PERSONAL AND INVOICING DATA

Family Name ..................................................................................................................................
First Name(s) ..................................................................................................................................
Company Name ..................................................................................................................................
Company Fiscal Address ..........................................................................................................................
Zip Code ............................................... Town ..................................................................................
Country ........................................................................................................................................
e-mail for correspondence ..................................................................................................................
e-mail for invoicing and billing information ....................................................................................
Tel. ..................................................................... Fax ....................................................................
VAT and FISCAL CODE (if different) ............................................................................................... Order ref. number (if requested on the invoice) ...........................................................

I will attend the Conference as: □ NON MEMBER □ AIM MEMBER
□ Delegate € .................................
□ Speaker (paper/s number ............ ) € .................................
□ Chairperson of the Session € .................................
□ Student € .................................
□ AIM Junior Member free
n. .......... Accompanying Persons/Social event € .................................

Total amount being paid: € .................

□ by credit card online (www.aimnet.it/icrf2014.htm)
□ by bank transfer, to the order of Associazione Italiana di Metallurgia - AIM at “Banca Popolare Commercio e Industria” (UBI Banca), Branch no. 2 - Via Borgogna 2/4 - Milano, account no. 00000022325 – cod. ABI 05048 - CAB 01602 - cin L, IBAN: IT92L0504801600000022325, swift code BLOPIT22. The transfer order must specify the name of the delegate and the reference “ICRF 2014”. A copy of the transfer order must be sent to AIM, together with this Registration Form.

We inform you that data collected will be treated following the normal institutional activity of AIM. In accordance to article 130 of the D.lgs 196/03 in every moment the interested party has the right to oppose the treatment of one's personal data. Your data will be dealt with in accordance of the D.lgs. in 30th June 2003 n.196, guaranteeing the rights of the interested parties foreseen in the 7 art. of the Decree.

We also inform you that AIM will communicate to foreign partners the personal data only for above reasons. We also inform you that your personal data will be on the list of the conference participants. In the case that you DO NOT want to appear on this list you may block the mail box. We also inform you that the holder of the personal data is AIM in Milan in P.le Morandi 2, while owner of the personal data is ing. Ottavio Lecis, available near the AIM offices.

Date............................................................ Signature..................................................

ICRF 2014 - Conference Secretariat - aim@aimnet.it - fax +39 027602 0551
## TIME TABLE

### Wednesday, 7 May 2014

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.00</td>
<td>Registration</td>
</tr>
<tr>
<td></td>
<td><strong>Room VOLTA</strong></td>
</tr>
<tr>
<td>9.00</td>
<td>Welcome addresses</td>
</tr>
<tr>
<td>9.40</td>
<td>Opening Lectures</td>
</tr>
<tr>
<td>11.10</td>
<td><strong>coffee break &amp; Opening of the Exhibition</strong></td>
</tr>
<tr>
<td>11.40</td>
<td><strong>Rolling &amp; Forging:</strong> Open Die Forging</td>
</tr>
<tr>
<td>12.40</td>
<td>lunch</td>
</tr>
<tr>
<td></td>
<td><strong>Room VOLTA</strong></td>
</tr>
<tr>
<td>14.10</td>
<td><strong>Rolling &amp; Forging:</strong> Simulation 1</td>
</tr>
<tr>
<td>15.50</td>
<td><strong>STEEL MARKET OUTLOOK</strong></td>
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<tr>
<td>16.20</td>
<td><strong>coffee break</strong></td>
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<tr>
<td>18.00</td>
<td><strong>End of the first day</strong></td>
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### Thursday, 8 May 2014

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<th>Event</th>
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<tbody>
<tr>
<td>9.00</td>
<td><strong>Ingot Casting:</strong> Remelting 1</td>
</tr>
<tr>
<td>10.40</td>
<td><strong>Innovative materials &amp; applications</strong></td>
</tr>
<tr>
<td>11.10</td>
<td><strong>coffee break</strong></td>
</tr>
<tr>
<td>11.20</td>
<td><strong>Rolling &amp; Forging:</strong> Technology</td>
</tr>
<tr>
<td>12.50</td>
<td><strong>Rolling &amp; Forging:</strong> Measurement &amp; Testing</td>
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<tr>
<td>14.20</td>
<td><strong>Ingot Casting:</strong> Additives &amp; Refractories Development</td>
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<tr>
<td>16.00</td>
<td><strong>Rolling &amp; Forging:</strong> Simulation 2</td>
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<tr>
<td>16.30</td>
<td><strong>coffee break</strong></td>
</tr>
<tr>
<td>18.30</td>
<td><strong>Ingot Casting:</strong> Remelting 2</td>
</tr>
<tr>
<td></td>
<td><strong>Ingot Casting:</strong> Simulation 2</td>
</tr>
<tr>
<td></td>
<td><strong>SOCIAL EVENT</strong></td>
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### Friday, 9 May 2014

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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</thead>
<tbody>
<tr>
<td>8.50</td>
<td><strong>Ingot Casting:</strong> Remelting &amp; Technology</td>
</tr>
<tr>
<td>10.50</td>
<td><strong>coffee break</strong></td>
</tr>
<tr>
<td>11.20</td>
<td><strong>Ingot Casting:</strong> Quality &amp; Metallurgy</td>
</tr>
<tr>
<td>12.40</td>
<td><strong>End of the Conference</strong></td>
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</tbody>
</table>