

## 2<sup>nd</sup> ANNOUNCEMENT AND CALL FOR PAPERS



# IAS 2010

# IAS 2010

**2<sup>nd</sup> INTERNATIONAL CONFERENCE  
ON INTERSTITIALLY ALLOYED STEELS**

October 3-6, 2010, Antwerp, Belgium

[www.ias2010.com](http://www.ias2010.com) (under construction)

After launching the 1<sup>st</sup> International Conference on Interstitially Alloyed Steels (IAS 2008) in South Korea we are pleased to announce the organization of IAS 2010, the 2<sup>nd</sup> edition of the conference series devoted to the state of science, production, technology and application of interstitially alloyed steels including social, political and customer needs. The conference, on request of the 1<sup>st</sup> IAS conference's delegates', will take place in Belgium (Antwerp), from October 3<sup>rd</sup> to October 6<sup>th</sup>, 2010.

In steels and especially their industrial production including interstitial alloying and subsequent metallic or functional coating and application (e.g. forming and (multi-material) joining) are of paramount importance for all industrial sectors and therefore a topic of research institutions worldwide. Interstitials are ubiquitous, whether as inevitable impurities or as alloying elements. However, interstitial alloying has extremely influenced and benefited steel making. Yet interstitial alloying of steels still offers exciting fundamental scientific and practical challenges and a wide variety of potential applications. IAS 2010 answers to the demands of the worldwide politics, global market requirements and customer needs. Consequently, IAS is addressing FCS's (BH, HSS, UHSS, quenched (B-alloyed) automotive grades, AHSS, DP, TRIP, TWIP) as well as Stainless Steels (austenitic, ferritic, martensitic, duplex) applicable for all markets.

**THE CONFERENCE WILL SPECIFICALLY INCLUDE NO LESS THAN 11 SPOTLIGHT SYMPOSIA, FOCUSING ON THE VARIOUS ASPECTS OF INTERSTITIALLY ALLOYED FERROUS ALLOYS:**

1. Alloy Development and Processing
2. Applications and Performance (forming, stamping, cutting, fatigue, wear resistance ...)
3. Atomic-scale Phenomena
4. Corrosion Challenges (scientific and industrial, such as e.g. met in the automotive, chemical and off-shore industry)
5. Global Requirements (sustainability, saving resources)
6. Mesoscale Phenomena and Microstructures
7. Physical Metallurgy (texture development, creep cavities at grain boundaries, interaction with micro alloying elements ...)
8. Steel Making (*including "green steel"*)
9. Thermodynamics, Kinetics and Phase Transformations (simulation and experimental confirmation)
10. Welding Technologies (practical, technical, metallurgical) *including Working Environments and Toxicology (medical)*
11. Quantitative Analysis of Interstitials (Analysis of Low-concentration High-mobility Interstitial Solutes, Internal Friction Techniques, Thermo-electric Effect, Hydrogen Thermal Desorption Analysis ...)

The often unusual combination of properties displayed by steels as a result of minor alloying additions of interstitials presents the metals and materials community with new scientific questions, technical difficulties and only partially understood application performances, which are crucial for actually all industries using steels for their products.

Therefore, IAS 2010 intends to be a global forum for the exchange of scientific, production related and technical information on interstitial solutes in all FLAT CARBON STEELS and STAINLESS STEELS and pool their expertise to help answer the questions and concerns of a highly motivated audience of materials scientists and engineers.

IAS will not discriminate at all between R&D ideas ("ideas cannot be confined within procedures"), approaches and achievements, which can be of paramount world-wide industrial interest, if not immediately then in the (near) future.

IAS also addresses the very important issue of work environment safety by demonstrating how welding fumes can harm e.g. steel shop workers and welding technicians over their working life span. These days this issue cannot be ignored anymore.

IAS 2010 is proud to be able to present international renowned keynote speakers to address an intellectual and ready-to-shape-the-future audience. IAS 2010 intends not only to build a forum for and build an alliance with specialists from all over the world and get together international specialists but also to give excellent young scientists a chance to shape their future in an international environment.

IAS 2010 therefore invites industrial professionals as well as top level and ambitious researchers to present their latest findings. In order to discuss and exchange their knowledge and offer access to newcomers in the research field(s), steel producers and industrial end-users of Interstitially Alloyed Steels to clearly understand the fundamental materials physics and the purely technical aspects.

Therefore, IAS 2010 offers a broad scope of special topics. Consequently, the conference program covers advanced theoretical and practical issues. The new format provides a comprehensive forum in which experts present their latest research results, share and discuss their opinions of the current developments and give an outlook for the future needs.

**WE LOOK FORWARD WELCOMING YOU AT IAS 2010!**

On behalf of the IAS 2010 Organizing Committee and the IAS 2010 International Board:

Dr. Nuri AKDUT, Belgium

Head of the International IAS Board

IAS Conference Chairman

**THE INTERSTITIAL ALLOYING ELEMENTS CONSIDERED ARE:**

**HYDROGEN**

Hydrogen Physical Metallurgy, Influence of H on Toughness Impact, Mechanisms of Hydrogen Embrittlement and Prevention, Microstructure-dependant Effects, H Interaction with Vacancies ...

**HELIUM**

Energetic Neutrons Irradiation Damage Mechanisms, Helium Formation Reactions, Vacancies-related Effects, He Bubble Nucleation and Growth, Welding-enhanced He Bubble Growth Rate, Swelling, Mechanical Properties Degradation, Enhanced Liquid Metal Attack, Austenitic/Ferritic/Martensitic Stainless Steels for Nuclear Applications ...

**BORON**

Boron Physical Metallurgy, Boron Hardenability, Tempering of B-alloyed Steels, Automotive Application of B-alloying in Steels, Welding, Hydrogen Trapping ...

## CARBON

Carbon Physical Metallurgy, Static and Dynamic Ageing Mechanisms, Bake-hardening, C-partitioning in Multi-Phase AHSS, C in TWIP Steels, Martensitic/Bainitic UHSS ...

## NITROGEN

Nitrogen Physical Metallurgy, High Nitrogen Steel, Austenitic/Duplex/Martensitic/Ferritic High N-alloyed Stainless Steels, High Strength Non-magnetic Applications, Austenite Stabilization Thermodynamics in N-bearing Steels, Corrosion Properties, Fatigue Resistance, Surface and Coating Technologies, Nitrocarburizing, Nitride Formation in LC and Stainless steels, Static and Dynamic Strain Ageing ...

## OXYGEN

Internal Oxidation Mechanisms, Oxide Formation, Selective Oxidation, Oxide Dispersion Strengthening, Oxygen Solubility and Diffusivity ...

## KEYNOTE LECTURES:

- ✓ Dr. Jacques CHARLES, Ugine&ALZ (ArcelorMittal group), France – *"Nitrogen: the key element which made duplex stainless steels a success story - a question of phase stability, corrosion, welding approaches and new developed grades with Mn instead of Ni alloying"*
- ✓ Prof. Hannu HÄNNINEN, Department of Mechanical Engineering, Helsinki University of Technology, Finland – *"Hydrogen Embrittlement of Steels"*
- ✓ Prof. Dr. med. Thomas KRAUS, Institute and Out-patient Clinic for Occupational Medicine, Universitätsklinikum Aachen, Germany - *"Working Environment and Toxicology of Mn Containing Steel Fumes"*
- ✓ Prof. Dag NORÉUS, Department of Physical, Inorganic and Structural Chemistry, Stockholm University, Sweden – *"Hydrogen storage in interstitial batteries alloys - A key to future vehicles"*
- ✓ Prof. Veena SAHAJWALLA, Centre for Sustainable Materials Research & Technology, School of Materials Science & Engineering, University of New South Wales, Australia – *"Sustainable Processing of Steel"*
- ✓ Prof. Marcel A. J. SOMERS, Technical University of Denmark, Lyngby, Denmark - *"Surface engineering of stainless steels with interstitials"*
- ✓ Prof. Bo SUNDMAN, Thermo-Calc AB and Royal Institute of Technology (KTH), Stockholm, Sweden – Tentative title: " "
- ✓ ...

### ABSTRACTS:

We invite you to submit your abstract(s) (max. 250 words) for oral presentation on IAS 2010 online ([www.ias2010.com](http://www.ias2010.com)) for one (or more) of the above listed symposia. Abstracts dealing with the interaction of several interstitial alloying elements (eventually with micro-alloying elements) from theory to industrial application are especially welcome.

We also like to ask you to pre-register via the homepage and to indicate your interest in certain symposias.

### DEADLINES:

Abstract submission	15 October	2009
Letter of acceptance	15 November	2009
Final manuscript	1 February	2010
Final program	1 May	2010
Early bird registration	31 May	2010

### REGISTRATION FEES:

Delegates: EUR 850, to be paid latest before 31 July 2010 – “Early bird” registration: EUR 750

Speakers: EUR 750, to be paid before 31.07.2010 – “Early bird” registration: EUR 650

Students (with proof): EUR 600, to be paid before 31.07.2010 – “Early bird” registration: EUR 500

Accompanying person: EUR 200

The registration fee covers:

- the welcome reception on Sunday, October 3, 2010,
- the conference proceedings (not for students),
- coffee-breaks,
- lunches,
- the conference dinner and
- the site-seeing tour incorporated into the conference program

Accommodation, visa costs, transfers, ... are not included.

Please feel free to forward this message to your coworkers and colleagues within and outside your institution/company that may want to be informed about the IAS 2010 conference.

## ORGANIZING COMMITTEE

Dr. Nuri AKDUT, private company, Belgium

Mrs. Rita PEYS, Koninklijke Vlaamse Ingenieursvereniging (K VIV) - Royal Flemish Society of Engineers, Belgium

Mrs. Annie DE WIT, Koninklijke Vlaamse Ingenieursvereniging (K VIV) - Royal Flemish Society of Engineers, Belgium

## IAS 2010 CONFERENCE SECRETERATE

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