

❖ PARTNERS



ASM SPAIN CHAPTER



❖ VENUE

CSIC (National Council for Scientific Research)
Headquarters
C/Serrano 117
Madrid
Spain
Map : <http://goo.gl/maps/5omhU>

❖ CONTACT

Organisation

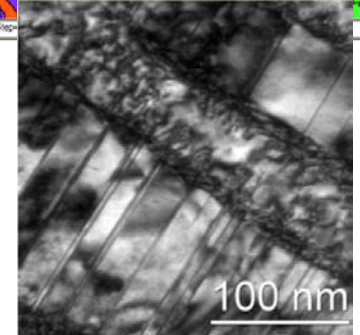
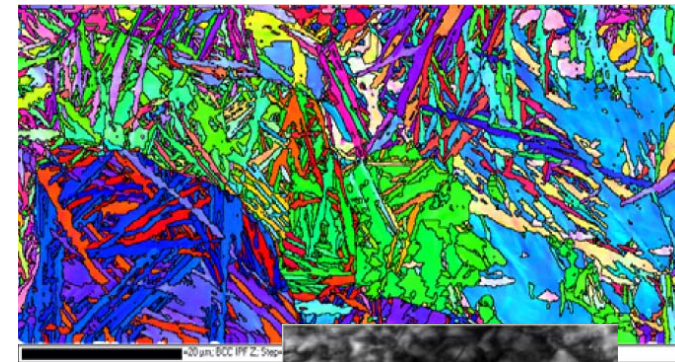
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❖ WORKSHOP

**ADVANCED STEELS:
CHALLENGES IN STEEL SCIENCE &
TECHNOLOGY**

SEPTEMBER 18 – 19, 2014
Madrid, Spain

CENIM (CSIC) (ES)
ASCO Industries (FR)
CTM (ES)
ASM Spain (ES)

❖ SCOPE

Many of the modern high strength steels are based on mixtures of bainite, retained austenite and possibly martensite. Some of the main solutions exploiting the potential of these microstructures include quenching and partitioning, low temperature bainite formation, other TRIP and TWIP steels, but also some continuously cooled forging products, etc. While the genesis of these microstructures can vary significantly, the mechanisms at play in controlling mechanical properties largely overlap. Other areas with strong similarities have gone unnoticed for simple labeling reasons. An example is the quenching and tempering of high carbon, high silicon steels, which is in fact quenching and partitioning, and was applied as early as 1995. This international workshop will bring together academic and industrial experts to present and discuss the latest developments. It follows the 'Modern Bainite Workshop' organized in Paris, 2011.

❖ AGENDA

September , Thursday 18, 2014

8:00 Registration

9:00 Institutional Welcome

Emilio Lora Tamayo, CSIC President

José L. González Carrasco, Director of CENIM (CSIC)

Gilles Auclair, Manager of ASCO Industries

José Manuel Prado, Director of CTM

José María Cabrera, President of ASM-Spain

9:30 Session 1. Chair by Prof. J. J. de Damborenea (CENIM-CSIC)

& Dr. Hans Roelofs (Swiss Steel)

Dr. Ulrich Prah, RWTH Aachen (DE)

Phase Field Modeling of Bainite

Dr. M. J. Santofimia, TU Delft (NL).

Q&P theory

Dr. Vicky Yardley, Ruhr-Universität Bochum (DE)

Orientation relationships and morphology in fcc-bcc martensitic transformations: phenomenological theory and EBSD investigations

Prof. Elisabeth Gautier, Ecole des Mines de Nancy (FR)

Bainite/martensite transformation under stress

10:50 Coffee Break

11:10

Session 2. Chair by Prof. I. Gutierrez (CEIT-TECNUM)

& Prof. C.G. de Andres (CENIM-CSIC)

Dr. Cem Tasan, Max-Planck-Institut für Eisenforschung GmbH (DE)

Multi-scale characterization of ductile martensitic stainless steels

Dr. Peter Hedström, KTH Royal Institute of Technology (SE)

On the Three-Dimensional Microstructure of Martensite in C Steels

Dr. Frederic Danoix, University of Rouen (FR)

Atomic-scale characterization of martensitic/bainitic steels

Dr. Roumen Petrov, Ghent University (BE)

Advanced EBSD Characterization in AHS steels.

Dr. Jose Antonio Jimenez, CENIM-CSIC (SP)

Advanced X-ray diffraction study in modern steels

13:15

Lunch

14:30

Session 3. Chair by Dr. M. Bechtold (Salzgitter Mannesmann Forschung)

& Dr. J.A. Jimenez (CENIM-CSIC)

Dr. Juan F. Almagro Bello, Acerinox SA (ES)

Advance Characterization of high-strength stainless steels

Prof. Isabel Gutierrez, CEIT-TECNUM (ES)

Effect of microstructure on the impact toughness of HSS

Dr. Daniel Casellas, CTM (ES)

Fracture toughness of high strength steels sheets: an approach to understand formability and crack edge fracture in cold forming

Prof. Eberhard Kerscher, Universität Kaiserslautern (DE)

The fatigue limit of high-strength bearing steels

16:10

Coffee Break

16:30

Session 4. Chair by Prof. M. Morcillo (CENIM-CSIC)

& Dr. J.F. Almagro Bello (Acerinox)

Dr. Ilchat Sabirov, IMDEA (ES)

Fatigue and fracture in Q&P steels.

Dr. I. Garcia, CENIM-CSIC (ES)

Wear behavior of HSS in discontinuous sliding contact conditions.

Prof. John Hald, Danish Technical University (DK)

Creep resistant martensitic/bainitic steels

Dr. Pedro E.J. Rivera-Díaz-Del-Castillo, Univ. of Cambridge (UK)

Hydrogen embrittlement in complex microstructures

Prof. Lars-Erik Svensson, University West (SE)

Welding of modern bainitic/martensitic steels

September , Friday 19, 2014

09:00

**Session 5. Chair by Dr. E. Gauthier (Ecole des Mines de Nancy)
& Dr. D. de la Fuente (CENIM-CSIC)**

Prof. Sybrand van der Zwaag, TU Delft (NL).

Alloy design based on thermodynamics, metallurgical principles and genetic algorithms

Dr. Thomas Sourmail, ASCO Industries (FR)

Air cooled bainitic steel design through tailoring of the transformation kinetics

Dr. Zuriñe Idoyaga Olano, Gerdau I+D (ES)

Development of new steel grades with improved mechanical properties by the addition of nanoparticles.

Dr. Marion Bechtold, Salzgitter Mannesmann Forschung GmbH (DE)

Novel concepts for improving formability in steels for the automotive industry

Dr. José Arancón, ArcelorMittal (ES).

Advanced Rail Steels.

11:05

Coffee Break

11:25

**Session 6. Chair by Dr. P. E. J. Rivera-Díaz-del-Castillo (Univ. of Cambridge)
& Dr. D. San Martin (CENIM-CSIC)**

Dr. Patrik Olund, Ovako Steel AB (SE)

Bainitic steels in applications subjected to wear and impact.

Dr. Jan Post, PHILIPS (NL)

Multi-stage Forming in Stainless Steels.

Dr. David San Martin, CENIM-CSIC (ES)

Sub-micrometer austenite obtained by controlled heat treatments: microstructure and mechanical properties

12:40

Workshop closure

