

HIGH TEMPERATURE MATERIALS

PHYSICAL AND CREEP PROPERTIES

Keynote: Microstructural stability of strong 9-12 wt% Cr steels

H.K.D.H. Bhadeshia

Change in the system free energy of high Cr heat resistant steels with annealing at elevated temperatures

Y. Murata, T. Kunieda, M. Nakai, M. Morinaga, T. Koyama

Structural stability of new creep-resisting steel grades with 9 or 12% Cr contents applied in power generation sector in industrial condition

J. Pasternak, A. Kielbus

Creep resistant 9-12% Cr steels - long-term testing, microstructure stability and development potentials

J. Hald

New creep rupture assessment of Grade 91

L. Cipolla, J. Gabrel

Improvement in creep strength of advanced heat resistant steel based ferrite matrix

Y. Toda, H. Kushima, K. Kimura, F. Abe

Microstructural stability and creep data assessment of Tenaris Grades 91 and 911

A. Di Gianfrancesco, L. Cipolla, F. Cirilli, G. Cumino, S. Caminada

BOILERS

Keynote: High performance creep resistant steels for 21st century power plants

F. Abe

Heat resisting steels of the new generation and examples of their application in supercritical boilers designed for the Polish power plants

J. Brózda, J. Pasternak

P23 and P24 for power generation and hydrogen service - are they fit for these applications?

H. van Wortel

Development of creep resistant 9Cr-3W-3Co steel containing high boron for USC boilers

H. Semba, F. Abe

STEAM TURBINE

Keynote: Materials development for boilers and steam turbines operating at 700 °C

R. Blum, R.W. Vanstone

Manufacturing and mechanical & metallurgical properties of 9 ~ 12% Cr rotor forgings steel for advanced steam turbine

S-T. Kang, D-S. Kim, K-C. Kim, M-S. Kim, S-H. Ryu, J-T. Kim

Cyclic fatigue characteristics of 10%Cr blade steels for advanced steam turbine

J-I. Suk, K-C. Kim, B-H. Kim, J-T. Kim

OXIDATION AND OPERATIONS

Investigations on oxidation and corrosion characteristics of the advanced boiler materials at steam temperatures up to 720°C

Q. Chen, G. Stamatelopoulos, A. Helmrich, S. Kjaer, C. Stolzenberger

The effects of extended operation parameters on X20CrMoV12.1 steel grade structural stability

A. Kielbus, K. Rodak, J. Pasternak

Analysis of effect of chemical composition on hot forming operations of P91 steel

S. Spigarelli, E. Evangelista, M. El Mehtedi, L. Balloni, A. Poli

WELDMENT

Keynote: Alloy design for similar and dissimilar welding and their behaviours

C. Jochum, H. Heuser

Fabrication and weldability of grade 23 tubing and piping

A. Poli, S. Caminada, C. Rosellini, A. Bertoni, G. Liberati

Carbon and nitrogen redistribution in weld joints of heat resistant steels

J. Sopoušek, R. Foret

Low cycle fatigue behaviours of the welded joints of 9 to 12% Cr ferritic heat resistant steels for boiler of fossil power plants

S-H. Ryu, Y-S. Lee, B-O. Kong, J-T. Kim, D-H. Kwak, S-W. Nam

MISCELLANEOUS

New heat resistant alloys more over 700°C

S. Muneki, H. Okubo, F. Abe

Reliability of computer simulations for the design of a cost effective low Ni heat resistant austenitic steel

O. Tassa, H. van Wortel, B. Bonnefois, E. Baune

Copper in super304H heat resistant steel

S.C. Cheng, Z.D. Liu, G. Yang, Y. Yang, L.M. Wang, X.J. Sun, H. Dong

Crack growth behaviour of P92 at temperatures above 500°C in different atmospheres

F. Schubert