

ICRS-8 INDUSTRIAL APPLICATIONS: WELDING

Thursday p.m. MAROON PEAK

Chair: **M. Hill**, University of California, Davis, CA

- 3:30 S152 RESIDUAL STRESS ANALYSIS OF ALUMINIUM WELDS WITH HIGH ENERGY SYNCHROTRON RADIATION AT THE HARWI II BEAMLINE
T. Fischer, A. Schreyer, GKSS Research Centre, Geesthacht, Germany
R. Martins, Joint Research Centre, Petten, The Netherlands
- 3:50 S119 RESIDUAL STRESS MAPPING IN A PIPE WELD REPAIR USING HIGH ENERGY X-RAY DIFFRACTION
P.J. Bouchard, British Energy Generation Ltd., Gloucester, UK
M. Turski, The University of Manchester, Manchester, UK
L. Edwards, ANSTO, Sydney, NSW, Australia
- 4:10 S163 THE RELAXATION OF RESIDUAL WELDING STRESSES UPON PROGRESSIVE SECTIONING OF WELDS
J. Altenkirch, Manchester Materials Science Centre, Manchester, UK and ILL, Grenoble, France
A. Steuwer, ESS Scandinavia Secretariat, Lund, Sweden
M.J. Peel, ESRF, Grenoble, France
P.J. Withers, Manchester Materials Science Centre, Manchester, UK
- 4:30 S94 STUDY ON THE EFFECT OF WELDING RESIDUAL STRESSES ON CRACK-TIP CONSTRAINT
X.B. Ren, Z.L. Zhang, Norwegian University of Science and Technology (NTNU), Trondheim, Norway
B. Nyhus, SINTEF Material and Chemistry, Trondheim, Norway
- 4:50 S155 INVESTIGATION OF RESIDUAL STRESS DISTRIBUTION IN FERRITIC STEEL WELD MEASURED BY NEUTRON AND SYNCHROTRON DIFFRACTION
A.M. Paradowska, Rutherford Appleton Laboratory, UK
J.H.W. Price, R. Ibrahim, Monash University, Australia
T.R. Finlayson, The University of Melbourne, Australia
U. Lienert, APS—Argonne National Laboratory, Argonne, IL
R. Blevins, ANSTO, Sydney, NSW, Australia
- 5:10 S47 MEASUREMENT OF RESIDUAL STRESSES IN LASER WELDED EDDS AND IFS PLATES USING XRD
C.S. Kishore, Sri Venkateshwara College of Engineering, Anna University, Tamilnadu, India

ICRS-8 DIFFRACTION TECHNIQUES: SYNCHROTRONS—MICROBEAM

Friday a.m. PIKES PEAK

Chairs: **G. Ice**, Oak Ridge National Laboratory, Oak Ridge, TN
N. Tamura, Lawrence Berkeley National Laboratory, Berkeley, CA

- 8:30 S186 *INVITED*—X-RAY MICRODIFFRACTION TECHNIQUES FOR MEASURING LOCAL MICROSTRUCTURE AND STRAIN DISTRIBUTIONS
J.D. Budai, B.C. Larson, G.E. Ice, J.Z. Tischler, T.Z. Ward, Oak Ridge National Laboratory, Oak Ridge, TN
W. Liu, Argonne National Laboratory, Argonne, IL
D.D. Sarma, Indian Inst. of Science, Bangalore, India
- 9:00 S52 SMALLER IS STRONGER: IN-SITU LARGE DIFFRACTION
R. Maaß, J. Zimmermann, S. Van Petegem, H. Van Swygenhoven, Paul Scherrer Institut, Villigen, Switzerland
- 9:20 S132 SPATIALLY RESOLVED STRAIN MEASUREMENTS ON MICRO MOULDS
A. Kienzler, B. Okolo, V. Schulze, A. Wanner, D. Löhe, Universität Karlsruhe (TH), Karlsruhe, Germany
- 9:40 S146 DETERMINATION OF STRESS AND TEXTURE GRADIENT IN CdTe THICK FILMS USING A HIGH ENERGY WHITE MICROBEAM
P. Gergaud, V. Consonni, G. Feuillet, CEA-LETI, MINATEC, Grenoble, France
T. Buslaps, European Synchrotron Radiation Facility, Grenoble, France
- 10:00 BREAK
- 10:20 S88 *INVITED*—NANOSCALE DIFFRACTION MICROSCOPY AT THE CNM/APS HARD X-RAY NANOPROBE BEAMLINE
M. Holt, J. Maser, R. Winarski, V. Rose, G.B. Stephenson, Argonne National Laboratory, Argonne, IL
- 10:50 S167 IN-SITU STUDY OF ELECTROMIGRATION INDUCED STRAIN/STRESS EVOLUTION AND DISTRIBUTION IN Sn-Cu LEAD-FREE SOLDER JOINTS USING SYNCHROTRON WHITE BEAM X-RAY MICRODIFFRACTION
K. Chen, Lawrence Berkeley National Lab, Berkeley, CA and UCLA, Los Angeles, CA
N. Tamura, Lawrence Berkeley National Lab, Berkeley, CA
F.Y. OuYang, K.N. Tu, UCLA, Los Angeles, CA