EuroSuperalloys 2018

Programme

The Mathematical Institute, University of Oxford – the Venue

http://www.eurosuperalloys2018.eu/

Updated on 2 Nov 2017 (FA, RR)

Draft of Programme
EuroSuperalloys 2018

ORAL PRESENTATION

A. New Alloy Development

#76	*Synchotron in-situ aging study of the γ' phase instabilities in high refractory content γ–γ' Ni-base superalloys* Stoichko Antonov, Dieter Isheim, David Seidman, Eugene Sun, Sammy Tin
#96	*Effect of thermomechanical treatment on the rate of crack growth in Alloy 780* M. Bergner, J. Rösler, B. Gehrmann, M. Hafez, D. Hünert, M. Schlesinger, M. Bellmer
#120	*Improved 3rd Generation Single Crystal Superalloy CMSX-4® Plus (SLS), Development and Characterization* Jacqueline B. Wahl and Ken Harris
#18	*The effect of Nb on the properties of a polycrystalline P/M Ni-Co based superalloy* Katerina A. Christofidou, Mark C. Hardy, Hang-Yue Li, Nicholas G. Jones, Paul M. Mignanelli, Alison S. Wilson, Olivier M. D. M. Messé, Ed J. Pickering, Cathie Rae, Christos Argyrakis, Han Tai, Suyang Yu, Alex Evans, Daniel Child, Paul Bowen, Howard J. Stone

B. Turbine Blades

#115	*How Micro and Macro Shear Testing of SX Ni-base Superalloys Can Contribute to a Better Understanding of Elementary Deformation Mechanisms* G.Eggeler, N.Wieczorek, F.Fox, S.Berglund, D.Bürger, P.Wollgramm, K.Neuking, G.Laplanche
#2	*The role of visco-plasticity during in-situ cooling of a Ni-based single crystal superalloy: Micromechanics, ex-situ TEM and a constitutive law* Chinnapat Panwisawas, Neil D'Souza, David M. Collins, Ayan Bhowmik
#29	*Creep of single-crystals of nickel-base superalloys at ultra-high temperature* B. Fedelich, A. I. Epishin, G. Nolze, T. Feldmann, B. Viguier, D. Poquillon, M. F. Ijaz, Y. Le Bouar, A. Ruffini, A. Finel
#13	*Investigating the dislocation driven micro-mechanical response under non-isothermal creep conditions in single-crystal superalloys* C. Schwalbe, J. Cormier, N. Jones, E. Galindo-Nava, C. Rae
#15	*Very high cycle fatigue of Ni-based single crystal superalloys at high temperature* Alice Cervellon, Jonathan Cormier, Florent Mauget, Zéline Hervier
#19	*Reaction of Ni-based superalloy with liquid Sn during liquid-metal-cooled directional solidification* J. Shen, Z.G. Xu, Y.Z. Lu, W. Zheng, L.H. Lou and J. Zhang
#26	*Thin-wall debit in creep of DS200+Hf alloy* L.M. Suave, J. Cormier1, A.S. Muñoz, A. Gaubert, P. Villechaise, L. Marcin

#116	*Creep Property and Phase Stability of Sulfur Doped Ni-base Single Crystal Superalloys and Effectiveness of CaO Desulfurization* Satoshi Utada, Yuichiro Joh, Makoto Osawa, Tadaharu Yokokawa, Takuya Sugiyama, Toshiharu Kobayashi, Kyoko Kawagishi, Shinsuke Suzuki, and Hiroshi Harada

C. Turbine Discs

#51	*An abrupt transition to an intergranular failure mode in the near-threshold FCG regime in Ni-based superalloys* J. Telesman, T.M. Smith, T.P. Gabb and A.J. Ring
#92	*Influence of Tertiary Gamm Prime (γ') Size Evolution on Dwell Fatigue Crack Growth Behaviour in CG RR1000* F. Schulz, H. Li, H. Kitaguchi, D. Child, P. Bowen
#10	*γ' precipitation study of a Co-Ni-based alloy* D. Locq, M. Martin, C. Ramusat, F. Fossard, M. Perrut
#128	*Competing Modes for Crack Initiation from Non-Metallic Inclusions and Intrinsic Microstructural Features during Fatigue in a Polycrystalline Nickel Base Superalloy* Jean Charles Stinville, Etienne Martin, Mallikarjun Karadge, Shak Ismonov, Monica Soare, Tim Hanlon, Sairam Sundaram, McLean P. Echlin, Patrick G. Callahan, William C. Lenthe, Jiashi Miao, Andrew E. Wessman, Rebecca Finlay, Adrian Loghin, Judson Marte, Tresa M. Pollock

D. Advances in Modelling Methods

#30	*A physics-oriented creep damage model for non-linear damage accumulations in single crystal superalloys* J.-B. le Graverend
#38	*Ring rolling process modeling with new kinematic and metallurgical models for aeronautic Ni-based parts* E. Marchal, O. Garcia Beltran, J. Schwartz
#65	*Development of single-crystal Ni-based superalloys based on multi-criteria numerical optimization and efficient use of refractory elements* M. Markl, A. Müller, N. Ritter, M. Hofmeister, D. Naujoks, A. Ludwig, J. Pfetzing-Micklich, A.P.A. Subramanyam, R. Drautz, T. Hammerschmidt, H. Schaar, K. Abrahams, I. Steinbach, R.F. Singer, and C. Körner
#121	*Phase-field modeling of precipitation microstructure formation during heat-treatments in Ni-base superalloys* M. Fleck, M. Holzinger, Y.-Y. Lin, F. Schleifer, F. Krieg, P. Kellner and U. Glatzel
#129	*Atomistic Simulations of Compression Tests on γ-Precipitate-Containing Ni_3Al Nanocubes* F. Houllé, F. Walsh, A. Prakash, E. Bitzek
#130	*Temperature-dependence of superlattice intrinsic stacking fault energies in Ni_3Al based alloys* Abed Breidi, Joshua Allen, Alessandro Mottura

E. New Techniques

#74	*High temperature dislocation climb in the γ' rafts of Single Crystal Superalloys: The hypothesis of a control by dislocation entry into the rafts* Alain Jacques, Roxane Trehorel, and Thomas Schenk
#89	*In situ Diagnostics of Damage Accumulation in Ni-based Superalloys* K. Kageyama, F. Adziman, T. Sui, A.M. Korsunsky and R.C. Reed
#59	*Influence of heat treatment on defects structure in single-crystalline blade roots studied by X-ray topography and positron annihilation lifetime spectroscopy* J. Krawczyk, W. Bogdanowicz, A. Hanc-Kuczkowska, A. Tondos and J. Sieniawski

F. Additive Manufacturing

#22	*Microstructure and mechanical properties of CMSX-4 single crystals prepared by additive manufacturing* M. Ramsperger, C. Meid, D. Bürger, P. Wollgramm, C. Körner, M. Bartsch, G. Eggeler
#42	*Additive Manufacturing of Nickel Superalloys: Opportunities for innovation and Challenges related to Qualification* S. S. Babu, N. Raghavan, J. Raplee, S. J. Foster, R. Dinwiddie, M. K. Kirka, Y. Lee, and R. D. Dehoff
#55	*Microstructural Evolution of Additively manufactured Co based superalloys – Direct Metal Laser Sintered CoCrMo after welding and heat treatment on to FSX414* Kaustubh Bawane, Dheepa Srinivasan, Dipankar Banerjee, Joydeep Pal, Abhik Choudhury
#97	*Characterization of Ni-based superlloy built by Selective Laser Melting and Electron Beam Melting* Y. L. Kuo, A. Kamigaichi, and K. Kakehi
#137	*Additive Manufacturing of powdery Ni-based superalloys Mar-M-247 and CM 247 LC in Hybrid Laser Metal Deposition* André Seidel, Thomas Finaske, Ariane Straubel, Horst Wendrock, Tim Maiwald, Mirko Riede, Elena Lopez, Frank Brueckner, Christoph Leyens

G. Cobalt-Based Superalloys

#28	*Investigation of the γ'-strengthened Co-base alloys: quaternary alloys Co-Al-W-Ta and multicomponent alloys* A. I. Epishin, N. V. Petrushin, G. Nolze, J. Midtlyng, G. Gerstein
#77	*High-temperature oxidation behavior of a novel Co-base superalloy* S. A. J. Forsik, A. O. Polar Rosas, T. Wang, N. Zhou, G. A. Colombo, S. J. Kernion and M. E. Epler
#100	*The effect of the grain boundary pinning CoAl phase on polycrystalline Co-base superalloys* Steffen Neumeier, Lisa Freund, Mathias Göken
#108	*Double steady-state creep regions in Co-Al-W-base single-crystal superalloy at 1000°C*

	S. Lu, L.F. Li, Q. Feng
#127	*Creep Behavior of Quinary γ'-strengthened Co-base Superalloys* Robert K. Rhein, Patrick G. Callahan, Sean P. Murray, Jean Charles Stinville, Michael S. Titus, Anton Van der Ven, and Tresa M. Pollock
#110	*Development of Advanced Single Crystalline Co-base superalloys* N. Volz, C.H. Zenk, R. Cherukuri, T. Kalfhaus, M. Weiser, S.K. Makineni, B. Gault, S. Fries, J. Schreuer, R. Vaßen, S. Virtanen, D. Raabe, S. Neumeier, M. Göken

H. Physical Metallurgy – Microstructure, Mechanisms & Properties

#36	*Mechanical properties evolution of γ'/γ'' nickel-base superalloys during long term thermal over-aging* A. Agnoli, C. Le Gall, J. Thebault, E. Marin, J. Cormier
#41	*Phase Transformations along Superlattice Stacking Faults in Ni-Based Disk Superalloys* T.M. Smith, B. D. Esser, D. W. McComb, M.J. Mills
#44	*Segregation-Assisted Plasticity in Ni-based Superalloys* D. Barba, T.M. Smith, J. Miao, M.J. Mills and R.C. Reed
#75	*Rejuvenation of SX Ni-base superalloy turbine blades: Unlimited service lifetime?* B.Ruttert, I.Lopez-Galilea, O. Horst, A.Basir Parsa, C.Somsen, G.Eggeler, J.Goerler, O.Shchyglo, I.Steinbach , W.Theisen
#79	*Study into the role of Ni-vapour on surface modification of a third generation single crystal superalloy* Dimitra Spathara, Duncan Putman, Nils Warnken
#3	*Consequences of a room temperature plastic deformation during processing on the durability of a Ni-based SX superalloy* Sarah Hamadi, Florence Hamon, Joël Delautre, Jonathan Cormier, Patrick Villechaise, Satoshi Utada, Paraskevas Kontis & Nathalie Bozzolo
#9	*On the coupling between recrystallization and precipitation following hot deformation in a γ- γ' superalloy* Anthony Seret, Charbel Moussa, Marc Bernacki, Nathalie Bozzolo
#11	*Twin orientation relationship between γ' precipitates and the hosting grain* Suzanne Vernier, Jean-Michel Franchet, Anne-Laure Rouffié, Christian Dumont and Nathalie Bozzolo
#37	*Grain Boundary Serration in Nickel-based Superalloy IN600: Mechanism and Effects on Mechanical Behaviour* Yuanbo Tang, Angus. J. Wilkinson, Roger.C. Reed
#45	*The Effects of Microstructure and Microtexture Generated during Solidification on Deformation Micromechanism in IN713C Nickel Based Superalloy* L. Gang, J.S. Cantó, S. Winwood, K. Rhodes, S. Birosca
#71	*Localised deformation and raft rotation during high temperature creep of Ni-based single crystal super alloys* B. Viguier, M.F. Ijaz, D. Poquillon, A. Proietti, C. Josse
#125	*On the Rapid Assessment of Mechanical Behaviour of Nickel-Based Superalloys using Small-Scale Testing* Sabin Sulzer, Enrique Alabort, Bryan Roebuck, and Roger Reed

I. Oxidation and Corrosion

#4	*The role of oxidised carbides on thermal-mechanical performance of polycrystalline superalloys* P. Kontis, Z. Li, M. Segersäll, J.J. Moverare, R.C. Reed, D. Raabe, B. Gault
#16	*On the effect of environmental exposure on dwell fatigue performance of a fine grained nickel-based superalloy* S. Pedrazzini, D. J. Child, T. Aarholt, A. Girling, K. Perkins, H. J. Stone, P. A. J. Bagot
#21	*Effect of rhenium addition on hot corrosion resistance of Ni-base single crystal superalloys* J.X. Chang, D. Wang, G. Zhang, L.H. Lou, J. Zhang
#86	*Alloys-By-Design: Design of a Damage Tolerant Polycrystalline Nickel-based Superalloys* A.A.N. Németh, D.J. Crudden, D.E.J. Armstrong, M.C. Hardy, R.C. Reed
#112	*Factors Affecting the Oxide Formation on a Ni-Based Superalloy: The Effect of Surface Finish, Grain Size and Cold Work* T. D. Reynolds, M. P. Taylor, D. J. Child, M. C. Hardy, H. E. Evans
#123	Revisit the Type II Corrosion Mechanism W.J. Zhang, R. Sharghi-Moshtaghin and D. Konitzer

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