



[info@engconfintl.org](mailto:info@engconfintl.org)

Conference Calendar  
Home  
About This Conference  
Conference Organization  
Abstract Submission  
ECI Conferences General  
Information  
Conference Venue  
Conference Fees  
Request for Next Mailing

## Beyond Nickel-Based Super Alloys

An ECI Conference

May 13-17, 2013  
Bad Berneck (Bavaria), Germany

### Conference Fees

The conference fee is all-inclusive. It includes registration, accommodations, most meals, taxes and gratuities from the night of Monday, May 13 to the lunch of Friday, May 17, 2013. Incidental fees (telephone calls, faxes, equipment rentals, spa, bar, mini-bar, etc.) are billed to your personal account by the hotel.

ALL PARTICIPANTS (INCLUDING MEMBERS OF THE ORGANIZING COMMITTEE, SESSION CHAIRS AND INVITED SPEAKERS) ARE REQUIRED TO REGISTER

**Conference fees will be posted for the following categories when the preliminary program is available (expected in January 2013).**

- Participant (single occupancy or sharing room with a guest; guest fee additional)
- Participant (sharing a room with another participant)
- Bona fide Graduate Student (sharing a room with another student)

**Final fees will be in US dollars based on the latest exchange rate.**

If you know of colleagues who would be interested in this conference, please forward them the address of this web site (<http://www.engconf.org/13as.html>).

Engineering Conferences International  
32 Broadway, Suite 314 - New York, NY 10004  
Tel: 1-212-514-6760; Fax: 1-212-514-6030; E-mail: [info@engconfintl.org](mailto:info@engconfintl.org)



[info@engconfintl.org](mailto:info@engconfintl.org)

Conference Calendar  
Home  
About This Conference  
Conference Organization  
Abstract Submission  
ECI Conferences General  
Information  
Conference Venue  
Conference Fees  
Request for Next Mailing

## Beyond Nickel-Based Super Alloys

An ECI Conference

May 13-17, 2013  
Bad Berneck (Bavaria), Germany

Engineering Conferences International  
32 Broadway, Suite 314, New York, NY 10004  
T: 1-212-514-6760 F: 1-212-514-6030 E: [info@engconfintl.org](mailto:info@engconfintl.org)

Engineering Conferences International (ECI) is a global engineering conferences program, originally established in 1962, that provides opportunities for the exploration of problems and issues of concern to engineers and scientists from many disciplines.

The format of the weeklong research conference provides morning and late afternoon or evening sessions in which major presentations are made. Available time is included during the afternoons for ad hoc meetings, informal discussions, and/or recreation. This format is designed to enhance rapport among participants and promote dialogue on the development of the meeting. We believe that the conferences have been instrumental in generating ideas and disseminating information to a greater extent than is possible through more conventional forums.

All participants are expected both to attend the entire conference and to contribute actively to the discussions. The recording/photographing of lectures and presentations is forbidden. As ECI conferences take place in an informal atmosphere, casual clothing is the usual attire.

Engineering Conferences International  
32 Broadway, Suite 314, New York, NY 10004  
T: 1-212-514-6760 F: 1-212-514-6030 E: [info@engconfintl.org](mailto:info@engconfintl.org)



[info@engconfintl.org](mailto:info@engconfintl.org)

Conference Calendar  
Home  
About This Conference  
Conference Organization  
Abstract Submission  
ECI Conferences General  
Information  
Conference Venue  
Conference Fees  
Request for Next Mailing

General Announcement and Call for Abstracts  
**Abstract Submission Deadline for Oral Presentations Extended to November 30, 2012**  
Abstract Submission Deadline Poster Presentations: March 1, 2013

## Beyond Nickel-Based Super Alloys

An ECI Conference

May 13-17, 2013  
Bad Berneck (Bavaria), Germany



[info@engconfintl.org](mailto:info@engconfintl.org)

Conference Calendar  
Home  
About This Conference  
Conference Organization  
Abstract Submission  
ECI Conferences General  
Information  
Conference Venue  
Conference Fees  
Request for Next Mailing

## Beyond Nickel-Based Super Alloys

An ECI Conference

May 13-17, 2013  
Bad Berneck (Bavaria), Germany

### Conference Organization

#### Conference Chair

**Uwe Glatzel**, University of Bayreuth, Germany  
contact: [uwe.glatzel@uni-bayreuth.de](mailto:uwe.glatzel@uni-bayreuth.de)

#### Conference Co-chairs

**Bernard Bewlay**, General Electric Global Research, USA  
**Lesley Cornish**, University of Witwatersrand, South Africa  
**Martin Heilmair**, University of Darmstadt, Germany  
**Joachim Schneibel**, (formerly) Oak Ridge National Laboratory, USA  
**David Shifler**, Office of Naval Research, USA  
**Howard Stone**, Rolls-Royce University Technology Centre, Cambridge, UK  
**Kyosuke Yoshimi**, Tohoku University, Japan

## Beyond Nickel-Based Super Alloys

An ECI Conference

May 13-17, 2013  
Bad Berneck (Bavaria), Germany

### About This Conference

#### Synopsis

Metals and alloys, being capable to withstand temperatures above 1200°C (2192°F) with stresses acting in the range of 100 MPa are of extremely high interest for several important applications. Additionally an oxidative aggressive environment is acting on the surface. Application examples are turbines used as jet engines or stationary gas turbines for electric power production. Also automotive engines are approaching these limits. These materials are therefore extremely attractive for industrial, environmental and socio-economical standpoints.

It is a major challenge to find and subsequently develop alloy systems which are capable of meeting these demands. State of the art materials used up to 1050°C are nickel-based superalloys and they will still be in service within the next 10 - 20 years. For highest demands they are used in single crystalline form in order to avoid grain boundary sliding. They approach up to 85% of their eutectic temperature in service. Further temperature improvements, needed to increase the efficiency, will be limited by these high homologous temperatures.

Potential new alloy systems are extensively studied by many research groups world-wide. The materials are tested and optimized with respect to the harsh loading conditions. The conference will be restricted to materials based on a metallic element and having metallic properties. A selected list of base elements ordered by decreasing melting point is: W, Re, Ta, Mo, Nb, Ir, Ru, Hf, Rh, V, Cr, Zr, Pt, Ti and Pd. A few of these systems are studied more intense than others (e.g. W, Mo, Nb, Pt, ...).

Intermetallic phases with high melting and/or disordering temperature are of interest as well. The conference will not cover ceramic materials as well as ceramic matrix composites.

Of special interest and experimentally demanding, since temperatures should exceed 1200°C, are the following characterization techniques:

- creep behavior
- oxidation resistance
- ductility from RT up to application temperature
- fatigue behavior
- resistance to crack propagation

and many others.

Experimental approaches can be summarized by:

- alloy development
- mechanical testing
- microstructure observations (dislocation structures, phase changes) and correlation to mechanical behavior
- oxidation resistance and improvement of it
- "exotic" experimental setups (alloy development on a small scale, in-situ testing and characterization)

and many others.

Simulation and modeling will cover:

- first principle calculations
- developing and testing of thermodynamic database for these materials

and many others.

Simulation and modeling will cover:

- first principle calculations
- developing and testing of thermodynamic database for these materials

#### Outline

The conference will address the multi-disciplinary nature of high temperature alloys and will attempt to bring together those who have expertise in specific aspects of these alloys. Depending on the system, its manufacturing route and application, a variety of questions have to be answered through experimental investigations as well as by simulation and modeling. Presentation will cover:

- alloy development for creep behavior and oxidation resistance
- mechanical behavior including ductility from RT up to application temperature, fatigue behavior and resistance to crack propagation
- microstructure observations (dislocation structures, phase changes) and correlation to mechanical behavior
- experimental approaches including "exotic" experimental setups (alloy development on a small scale, in-situ testing and characterization)
- simulation and modeling
- applications

The program will consist of invited and solicited oral presentations and poster presentations.

[ [Go to top](#) ]