Deadlines

October 1, 2010
submission of extended abstracts online

November 30, 2010
notification of authors about acceptance of their papers

March 31, 2011
submission of full papers and registration including payment (conditional for publication of paper)

April 15, 2011
publication of final programme

June 01, 2011
submission of power point presentations

June 28 – July 1, 2011
VHCF-5, Berlin, Germany

Please see *www.vhcf5.de* for all information. An online system for registration and important instructions for the submission of abstracts is established.

Venue
The conference will be held in Berlin, the old and new capital of Germany. Berlin is an exciting city with pulsating cultural life. Traditional and modern architecture both offer interesting contrasts and many different insights. A rich cultural programme allows the participants to enjoy the diverse facets of this metropolis. For further information please see: *www.visitberlin.de*

Travelling Information
Berlin can be reached easily by plane, train or by car.
Please see: *www.visitberlin.de*

Social Events
A number of memorable events for all participants will be organized.

Technical Visits
Technical visits to research institutions and companies will be arranged. Further details will be given at *www.vhcf5.de*.

Insurance
The German Association for Materials Research and Testing as organizer of the conference cannot be made responsible for any personal accident or loss or damage of private property of participants and accompanying persons. Participants must arrange for their own insurance cover if considered necessary.

Accommodation
The German capital offers a wide range of hotel accommodation. Special arrangements for participants are being done and will be described soon at *www.vhcf5.de*.

Language
The VHCF-5 Language is English and will be required for abstracts, papers and oral contributions.

Proceedings
In addition to a printed Abstract Volume the proceedings will be published as CD-ROM and be available at the conference.

Visa
Participants who need a visa for Germany should obtain this at the German Embassy of their country. The visa always has to be applied for by the person to travel to Germany at the competent German mission abroad covering the place of residence. Details on the documents to be presented at the time of application are often available on the webpage of the competent German mission or directly from the mission itself.

www.vhcf5.de

DGM Deutsche Gesellschaft für Materialkunde e. V., DE

TMS The Minerals, Metals & Materials Society, US

JSMS The Society of Materials Science, JP

SF2M Société Française de Métallurgie et de Matériaux, FR

Gruppo Italiano Frattura, IT

Call for Papers

VHCF-5

Fifth International Conference on Very High Cycle Fatigue

June 28 - July 01, 2011
Berlin, Germany

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Aims and Scope

Many components as for instance automobile and motor parts, train wheels, tracks, bridges, medical instruments, heavily stressed power plant components such as engines and rotors, offshore structures or wind energy plants have to withstand a number of cycles higher than 10^7. These high numbers of cycles can be a result from high frequency or a long product life.

The need to reduce environmental impact and the need for increased economic efficiency are driving the design of new components and systems in which fatigue lifetimes as long as 10^9 to 10^{10} cycles or even more are required.

Thus, there is global interest in, and need for, improved understanding of the fatigue behavior of structural materials in the very high cycle fatigue (VHCF) regime.

The Fifth International Conference on Very High Cycle Fatigue resumes the successful series of previous conferences (1998/Paris, 2001/Vienna, 2004/Kusatsu, 2007/Ann Arbor) on the latest very high cycle fatigue research.

The objective of the conference is to provide a worldwide platform for scientific communication, discussion and activities for all those interested in both fundamental aspects and practical applications.

The conference aims to bring together researchers from various engineering disciplines as mechanical engineering, civil engineering, power plant engineering, automotive and transportation, aerospace, microelectronics and other branches, all faced with failure phenomena and their prevention, on order to exchange their experiences and to gain more comprehensive understanding.

The conference will comprise invited key-note lectures by outstanding international scientists, contributed oral presentations and posters to the following topics.

Scientific Topics

The scientific topics will focus on

- all metallic materials (ferrous materials, non-ferrous materials as Al, Mg, Ti, Ni etc.)
- composites and
- advanced materials and MEMS

at material related number of cycles 10^6 to 10^{10} or higher.

A) Fundamentals, physics and mechanisms
A1 Mechanisms of crack initiation
A2 Nonpropagating cracks, growth of short and long cracks

B) Parameters
B1 Influence of microstructure and defects
B2 Influence of environment and temperature
B3 Notch and gradient effects
B4 Effect of mean and residual stresses
B5 Effect of variable amplitude loading
B6 Effect of surface treatment

C) Experimental methods
C1 Fatigue testing machines
C2 Instrumentation and experimental methods
C3 Prognosis and health monitoring

D) Applications to components and structures
D1 Statistical and probabilistic modeling, development of life estimation models
D2 Assessment and modeling of fatigue damage and damage accumulation
D3 Actual structures and their components
D4 Case studies in industrial applications

E) Material databases and its application
E1 Material databases and application systems
E2 Analysis of material databases