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To cite this version :

Qingyuan WANG, Thierry PALIN-LUC - Guest Editorial for VHCF6 Special Topic - Fatigue and Fracture of Engineering Materials and Structures - Vol. 38, n°11, p.1265 - 2015

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Guest Editorial for VHCF6 Special Topic

From October 15–18, 2014, the Sixth International Conference on Very High Cycle Fatigue (VHCF-6) was held in Chengdu, China. The VHCF-6 conference continues the trend of successful previous conferences started with VHCF-1 in 1998, organized by Prof. Claude Bathias and Prof. Stefanie Stanzl-Tschegg in Paris, followed by VHCF-2 in 2001 in Vienna, VHCF-3 in 2004 in Kusatsu, VHCF-4 in 2007 in Ann Arbor and VHCF-5 in 2011 in Berlin.

Very High Cycle Fatigue as an interesting research topic of fatigue rises notably in the last two decades. With growing concerns of fatigue life requirement of many components well beyond 10^7 load cycles, the study on a variety of aspects of very high cycle fatigue, especially Advancements in VHCF Instrumentations, Advanced Materials, Influence of Environment and Temperature, Influence of Small Scale Damages, Effect of Microstructure on Crack Initiation Mechanism, Life Prediction, Statistical Analysis and Modeling in Fatigue, attracted permanent attention of scientists and designers during this VHCF conference. Scientists, engineers and engineering designers from academia and industry contributed to VHCF-6. More than 152 researchers from 12 countries attended the conference. Overall, there were 88 accepted abstracts, 74 accepted full papers and 12 sessions of the conference witnessed very active presentations and discussions. Seven papers were selected for publication as a special topic of *Fatigue and Fracture Engineering Materials and Structure* international journal. These papers have been revised and significantly extended by the authors and subjected to the normal FFEMS peer review process.

The guest editors gratefully acknowledge the dedicated work carried out by the authors, reviewers and Wiley staff for the papers submitted to this Special Topic. We would like to thank too the main sponsors of the Symposium, NSFC, CSTAM, Sichuan University and Chengdu University, for their generous support. We would like to thank also the Editor in Chief of this journal, Prof. Youshi Hong, for his distinguishable supports and contributions throughout the conference and publication process. Particularly, the guest editors wish to dedicate this Special Topic in FFEMS international journal to Prof. Claude Bathias, for his significant influence in the development of researches in the field of Very High Cycle Fatigue all over the world. Unfortunately, he passed away 6 months after VHCF6 was held.

While the diverse paper topics presented at the Chengdu VHCF-6 conference illustrated the importance of very high cycle fatigue in today's engineering practice, it also showed that further researches have to be carried out over the forthcoming decades. Anticipating a better understanding of VHCF, the next conference in this series (VHCF-7) will be held on July 3–5, 2017 in Dresden, Germany.

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