

Preface

A. Nagesha¹ · R. Sandhya¹ · B. K. Choudhary¹ · K. Laha¹

Published online: 7 January 2016
© The Indian Institute of Metals - IIM 2016

Creep, Fatigue and Creep-Fatigue Interaction are among the major life limiting factors in high temperature components. A thorough understanding of material behaviour under the above loading conditions is therefore of paramount importance in the design, operation, life assessment and life extension of components operating at high temperatures. This special issue of The Transactions of The Indian Institute of Metals (*Trans. IIM*) on Creep, Fatigue and Creep-Fatigue Interaction has 80 papers selected from the papers to be presented at the 7th International Conference on Creep, Fatigue and Creep-Fatigue Interaction to be held at the Indira Gandhi Centre for Atomic Research (IGCAR), Kalpakkam, India, during 19–22 January, 2016. This is a premier conference in the area of creep and fatigue, attracting a large number of delegates from all over the world. This series conference, organized once in 4 years, was first held at Kalpakkam in the year 1987. From then on, it has grown in strength with the 6th International Conference which was held in 2012, having a participation of over 340 delegates. The present conference, the 7th in the series has over 350 participants from research and academic institutions and industries. A total of 255 talks are scheduled to be presented at the conference, with 54 invited talks by specialists from India and abroad. The conference has also attracted a large number of Indian

and overseas students who would benefit from the 4-day deliberations at the conference.

The papers presented in this special issue of The *Trans. IIM* have been chosen after a rigorous peer review by experts from India and abroad. The 80 papers in this issue have been broadly classified into twelve sub-topics ranging from the basics of creep and fatigue deformation to creep-fatigue interaction, design, life prediction, modeling and simulation and novel techniques of testing such as miniature specimen testing. Thermomechanical and high cycle fatigue, crack growth, failure analysis and emerging fields such as multiaxial creep and fatigue and fretting fatigue have also been covered. The papers published in this special issue reflect the current state of the art in the areas of creep and fatigue, which makes it a valuable reference for researchers, engineers and students working in the above fields.

We thank the authors for contributing their latest research and to the reviewers for sparing their valuable time for critically reviewing the manuscripts. Thanks are also due to the Prof. K. Bhanu Sankara Rao, Chief Editor, *Tran. IIM* and to Springer for agreeing to publish selected papers as a special issue of the *Tran. IIM*. We record our sincere appreciation to the Springer production team for their dedicated efforts in bring out this issue in time.

✉ R. Sandhya
san@igcar.gov.in

¹ Mechanical Metallurgy Division, Indira Gandhi Centre for Atomic Research, Kalpakkam, India