

Preface

The original purpose of establishing the biannual SMAR conference series was to organize conferences in the Middle East region, in order to present innovative solutions for monitoring, assessment and rehabilitation in the booming construction activities of these countries. Dubai, UAE was the host of the first successful SMAR conference. It was successful not only because of a plenty of interesting keynote lectures as well as technical session presentations, but also the successful collaboration between two completely different cultures to co-organize the conference, namely Switzerland and UAE. We showed that despite completely different cultures, such collaborations are possible and successful, if involved people are ready to learn from each other. Therefore, we have decided to co-organize the SMAR2013 with our colleagues in beautiful historical city of Istanbul, Turkey, which connects west and east parts of the world.

The SMAR 2013 conference is the second conference on Smart Monitoring, Assessment and Rehabilitation of Civil Structures to be held in Istanbul, from 9 to 11 September 2013. Co-organized by Empa, the Swiss Federal Laboratories for Materials Science and Technology and ITU, Istanbul Technical University, the conference aimed at bringing together from around the world academics, researchers, builders and building authorities in the broad area of testing and monitoring technologies, in structural modeling and assessment methods, in the application of advanced materials for structural rehabilitation and allied fields, to review and discuss the recent achievements, share the latest developments in these areas, and address the challenges that the future poses. Furthermore, the conference will provide a platform for exploring the potential of international co-operation. It is also important to note that ITU, which have been established in 1773, is celebrating its 240th anniversary in 2013.

SMAR 2013 is sponsored jointly by the International Society for Structural Health Monitoring of Intelligent Infrastructure (ISHMII), International Institute of FRP in Construction (IIFC) and International Union of Laboratories and Experts in Construction Materials, Systems and Structures (RILEM).

The proceedings contain a total of 187 papers written by authors from around 28 Countries worldwide. The contributions include six Keynote Papers. In line with the aims of the SMAR conference, and as may be seen from the List of Contents, the papers cover a wide range of topics under a variety of themes. There is a healthy balance between papers of a theoretical nature, concerned with various aspects of computational issues, and those of a more practical nature.

The abstract of the papers are included in this booklet and the attached DVD provides the full papers. The papers are in the following areas of monitoring, assessment and rehabilitation of civil structures:

- Structural Health Monitoring
- Performance and damage assessment
- Damage control, repair and strengthening, fire protection
- Durability of material systems and structures as related to harsh environment
- Practical applications and case studies

We would like to thank all authors for preparing their work towards this compilation, which will undoubtedly serve as a useful reference to practitioners, researchers, students and academics, and allied disciplines. Special thanks are to Members of the International Scientific Committee, who reviewed the papers carefully. The support of the Sponsoring Organizations and Companies is gratefully acknowledged. We are indebted to our colleagues in the Local Organization Committee. Thanks to the ITU and Empa conference team, Caglar Goksu and Bernadette Havranek the conference secretaries, for their tireless efforts and quick responses to many demands of the conference.

Masoud Motavalli and Alper Ilki

Co-Chairs, SMAR 2013

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