

# Preface

The ICRESH-ARMS 2015 Conference at Luleå was an important milestone in the history of activities of the Division of Operation and Maintenance, Luleå Technical University. It was hosted by the Operation and Maintenance Division at LTU and had considerable participation both from the division and the university. This conference was also successful in attracting a fairly large number of researchers worldwide to deliver invited talks, present papers, and attend the exciting sessions. There was a good interest in participation from the industries around that saw an opportunity to interact with engineers, researchers, academicians, and managers who are at the forefront of related technologies in reliability, operation and maintenance, condition monitoring, risk and safety in various domains, eg. Manufacturing, Transportation, Defense, Power, Mining, and the IT sector. In particular, there was significant interest in Railway infrastructure and asset management. Condition-based maintenance with emphasis on diagnostics, prognostics and health management, and maintenance of large engineering systems and their implications to risk and safety were another area where the industry and academia found common interest. A growing interest in the use of nonrenewable energy sources saw several presentations from India highlighting various risk and safety issues besides quantitative risk assessment. Some papers reflect active interest in industry in big data analytics and context-based thinking for decision making and signified a growing awareness amongst industries to adapt to new technologies. Mining and Railways were two domains with significant local interest in Sweden and saw various presentations in innovative approaches to long-term solutions related to aging, health management, and prognostics. Modeling and Simulation saw increasing applications in various industrial domains and a growing trend among researchers to develop a holistic and integrated approach to address various conflicting issues of reliability, risk, production, and cost. An important highlight was the discussions that the interactive sessions triggered during the breaks between the participants from the industry and the academicians. There were in all 82 papers selected after reviews for presentation in various sessions, namely:

- Degradation/Aging and Preventive Maintenance
- Diagnostics, Prognostics, and Health Management
- Maintenance Management
- Maintenance Modeling and Analysis
- Performance Management and Energy
- Software Reliability
- Probabilistic Risk and Safety Analysis
- Reliability Analysis and Modeling
- Reliability and Maintenance of Mining Machinery

A total of 53 papers have been selected in this book from across all the sessions in the conference. They cover a large spectrum of the theme of the conference and present exciting findings which enrich the current applied knowledge base in the subject with indicators to the future in the industry. The endeavor in the selected compilation has been to avoid losing focus of the ultimate beneficiary of the applied nature of this work in the industry in various domains.

On behalf of the ICRESH-ARMS organization, we wish to express our sincere appreciation to the conference delegates, the distinguished keynote speakers, authors, workshop leaders, and members of the scientific review committee of the ICRESH-ARMS 2015, for their outstanding contribution towards the success of the conference. We are thankful also to Dr. Adithya Thaduri, for his support to prepare the proceedings.

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and Safety

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