

## PREFACE

The Monograph Book Series comprises a large number of papers in selected 20 reliability, safety, and security Methodology Areas and 28 Application Areas, listed below.

### Methodology Areas:

- MA1. Accident and incident modelling;
- MA2. Complex systems and critical infrastructures reliability, safety and security modelling and optimization;
- MA3. Complex systems and critical infrastructures maintenance strategies;
- MA4. Complex systems and critical infrastructure business continuity modelling and optimization;
- MA5. Crisis management support systems;
- MA6. Cybersecurity and functional safety in hazardous systems;
- MA7. Disaster preparedness, mitigation and response;
- MA8. Human factors in system reliability, safety and security;
- MA9. Mathematical methods in reliability, safety and security;
- MA10. Monitoring and early warning systems;
- MA11. Occupational safety;
- MA12. Prognostics and system health management;
- MA13. Reliability, safety and security of components and systems;
- MA14. Reliability, safety and security related management systems;
- MA15. Research challenges concerning sustainability, safety and security;
- MA16. Risk and reliability assessment and management;
- MA17. Security, vulnerability and resilience of systems;
- MA18. Simulation based methods for reliability, safety and security;
- MA19. Statistical methods in reliability, safety and security;
- MA20. Uncertainty analysis.

### Application Areas:

- AA1. Aeronautics and aerospace;
- AA2. Artificial intelligence;
- AA3. Chemical and process industry;
- AA4. Civil engineering;
- AA5. Critical infrastructures;
- AA6. Cyber systems;
- AA7. Energy;
- AA8. Food;
- AA9. Gas extraction and distribution;
- AA10. Healthcare;
- AA11. Heating;
- AA12. Hydrogen technologies;
- AA13. Industrial automation and control;
- AA14. Industry 4.0 and 5.0;
- AA15. Information and communication;
- AA16. Land transport;
- AA17. Manufacturing;
- AA18. Maritime and offshore;
- AA19. Mines and coal mining;
- AA20. Monitoring;
- AA21. Natural and operation hazards;
- AA22. Nuclear power plants;
- AA23. Occupational conditions;
- AA24. Oil extraction and distribution;
- AA25. Water supply;
- AA26. Robotics;
- AA27. Supply chains and logistic networks;
- AA28. Smart buildings and cities.

The Monograph Book Series is composed of 10 books creating the Monograph's Parts 1-10.  
The Monograph Part 1 is composed of papers from the following Methodology Areas:

- MA1. Accident and incident modelling;
- MA20. Uncertainty analysis;

and Application Areas:

- AA4. Civil engineering;
- AA5. Critical infrastructures;
- AA16. Land transport;
- AA17. Manufacturing;
- AA18. Maritime and offshore;
- AA21. Natural and operation hazards;
- AA24. Oil extraction and distribution'
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The proposed Monograph Book Series can become **an useful source of current knowledge** for scientists, engineers and other people interested in reliability, safety and security.

All industry sectors can fruitfully use the books by selecting particular parts and items.

The book could also be used for teaching courses at MSc and PhD university studies, primarily at technical universities, using selected parts and papers depending on the specialization and study level.

We, the Editors of this Monograph Book Series, would like to express our thanks to all Session Organizers and Authors for their research results that contribute to further progress in reliability, safety, and security and create an excellent and valuable source for scientists, researchers, MSc and PhD students, and practitioners working in this area.

*Krzysztof Kolowrocki & Ewa Dąbrowska*