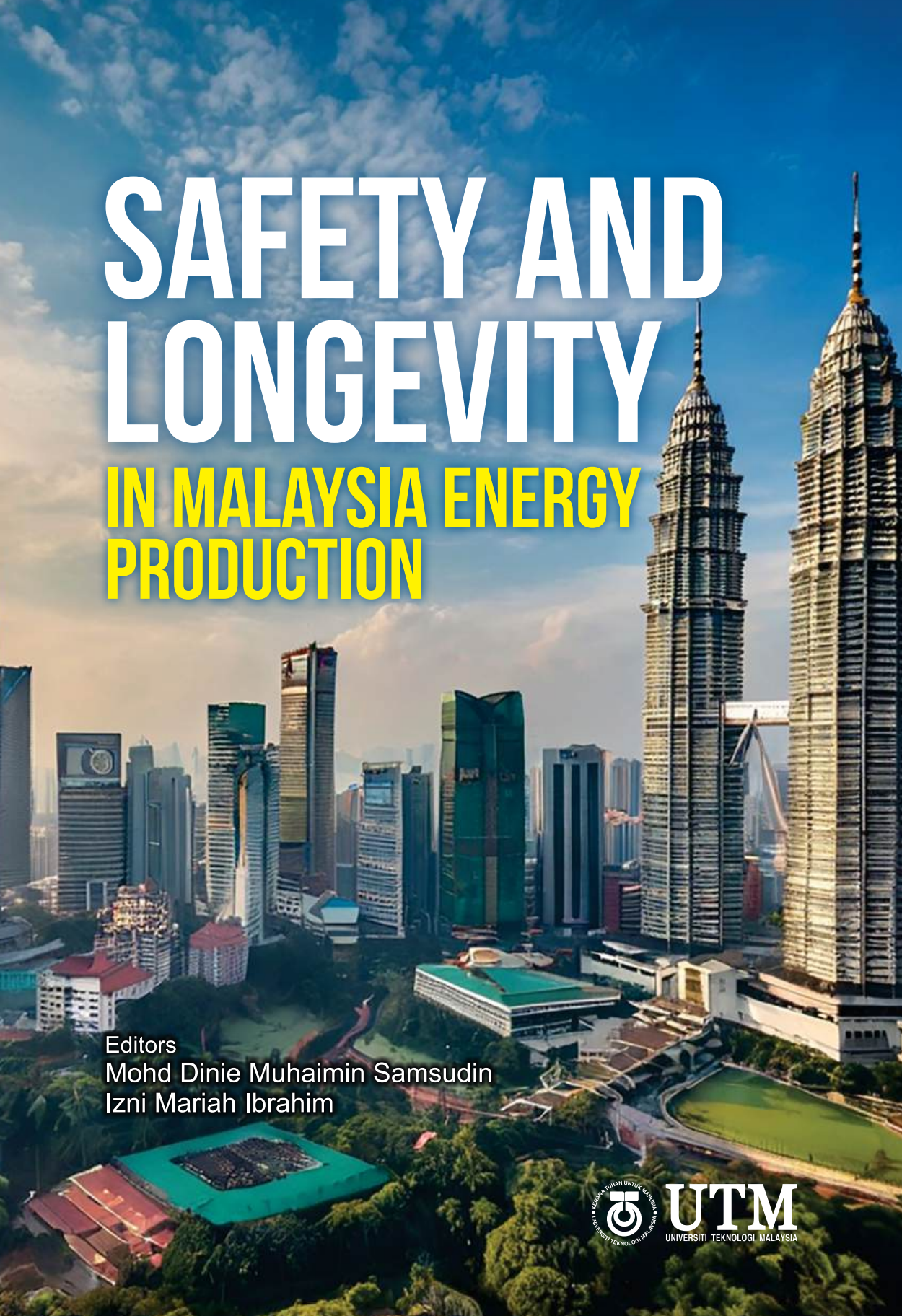
SAFETY AND LONGEVITY

IN MALAYSIA ENERGY PRODUCTION



Editors
Mohd Dinie Muhaimin Samsudin
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UTM
UNIVERSITI TEKNOLOGI MALAYSIA

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Safety and Longevity in Malaysia Energy Production provides an in-depth overview of safety challenges and solutions in Malaysia's energy sector, crucial for supporting growing energy demands. The book covers arange of topics essential for safe and sustainable energy production, including advanced computational fluid dynamics for predicting erosion and lifespan of hydrocarbon fittings, methods to prevent corrosion on carbon steel infrastructure, and alternative materials for storing liquefied petroleum gas. It also examines fire hazards of hydrocarbons and alcohol-based fuels, LNG dispersion consequences, and flammability and toxicity of electrical cables. Concluding with insights from flame heat flux experiments, the book offers a comprehensive exploration of both traditional and innovative safety measures. Targeting at professionals, researchers, policymakers, academics, and students in the energy sector, this book provides practical solutions for real-world challenges. By integrating computational and experimental approaches, it aims to enhance safety, extend infrastructure longevity, and support sustainable energy production in Malaysia, minimizing risks and boosting resilience.

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PREFACE

In the context of dynamic energy production and distribution, the emphasis on safety and the preservation of asset integrity are paramount. As Malaysia's energy industry expands and drives economic advancement, adhering to rigorous safety and integrity standards becomes increasingly critical.

Safety and Longevity in Malaysia Energy Production embarks on a journey through Malaysia's energy sector, emphasising safety and integrity as essential components in every aspect of the production and distribution process. The book aims to provide a comprehensive overview of safety challenges and solutions, ensuring the sustainability and resilience of the energy sector.

This book offers thorough analyses and comprehensive case studies on topics such as erosion and corrosion phenomena, energy storage, and flammability studies associated with hydrocarbon releases, providing a detailed overview of the safety and integrity of Malaysia's energy systems.

Covering a wide range of essential topics, the book explores advanced computational fluid dynamics techniques to predict erosion, investigates methods to prevent corrosion, examines alternative materials for energy storage, and evaluates fire hazards associated with hydrocarbons and other fuels.

Safety and Longevity in Malaysia Energy Production is intended for researchers, practitioners, policymakers, and students in the energy sector, offering in-depth knowledge and practical solutions to real-world challenges.

The motivation to compile this book stemmed from the need to enhance safety measures in Malaysia's rapidly evolving energy sector. The dedication and expertise of our contributors have enriched its content, expanding the boundaries of knowledge in this vital field.

As editors, we extend heartfelt gratitude to all contributors for their unwavering commitment and scholarly contributions. We also express sincere appreciation to readers for their interest in advancing the discourse on safety and longevity in Malaysia's energy sector.

The book is organized into chapters that systematically address various aspects of safety and integrity, from erosion and corrosion control to fire safety and energy storage solutions.

Readers are encouraged to first understand the foundational concepts before delving into specific case studies and advanced topics for a holistic understanding of the discussed safety measures. The editors and contributors are experts with extensive backgrounds in safety engineering, energy production, and environmental sciences, bringing a wealth of knowledge and experience to the subject.

We hope that *Safety and Longevity in Malaysia Energy Production* will inspire informed decision-making, drive continuous improvement, and ultimately contribute to a safer, more sustainable, and resilient energy future for Malaysia and beyond.

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