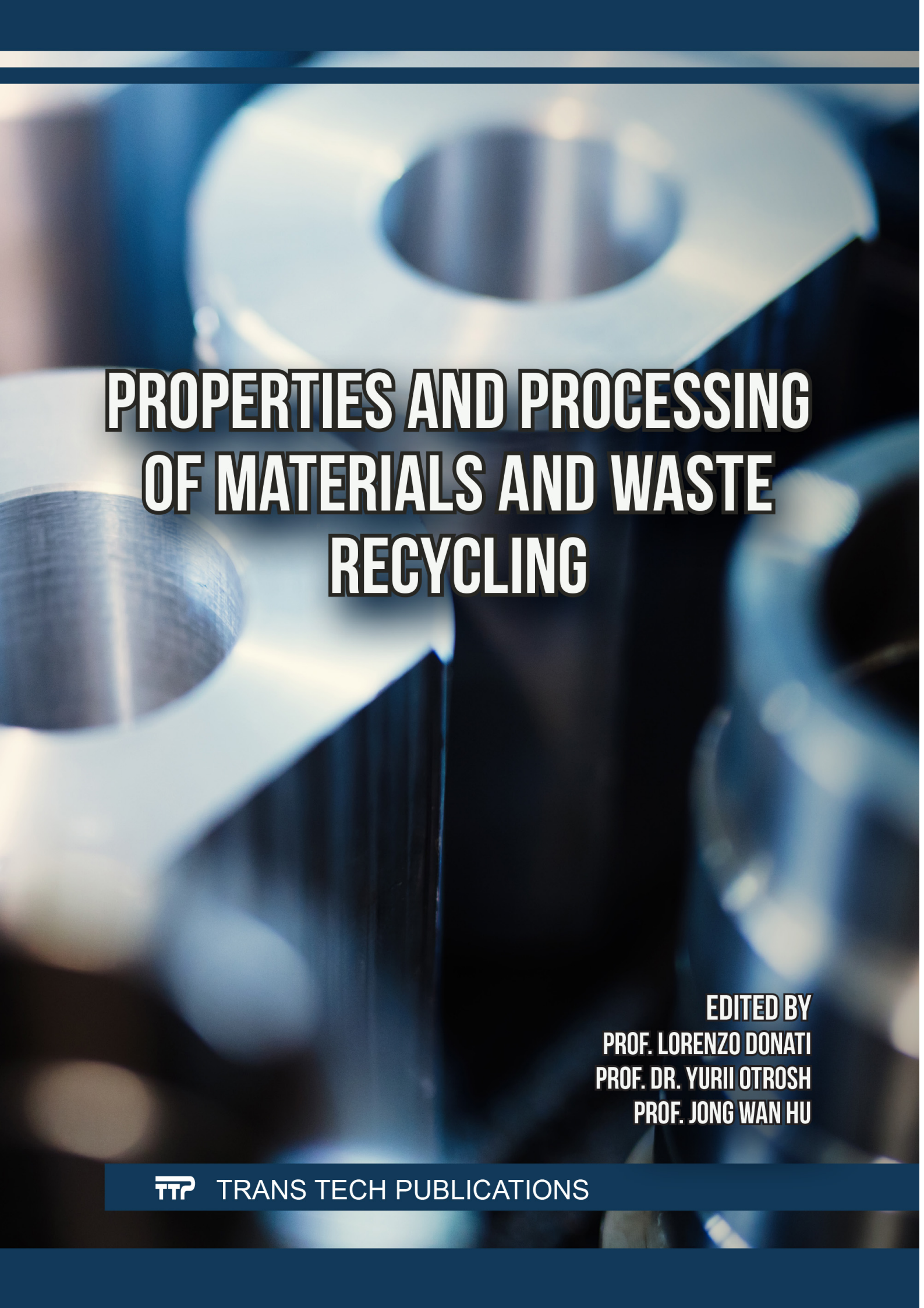

PROPERTIES AND PROCESSING OF MATERIALS AND WASTE RECYCLING

EDITED BY
PROF. LORENZO DONATI
PROF. DR. YURII OTROSH
PROF. JONG WAN HU

TRANS TECH PUBLICATIONS

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Preface

This special edition brings together a collection of articles that explore advances in materials science and environmental sustainability. The focus is on three distinct research areas: aluminium alloy properties and processing technologies, polymers and composites, and waste recycling and soil contamination analysis. Each chapter has insights and solutions that reflect the growing demand for innovative developments in various industries.

The first chapter delves into the metallurgical and mechanical properties of aluminium alloys, a material prized for its lightweight, corrosion resistance, and strength. The articles in this chapter investigate extrusion techniques, alloy composition modifications, mechanical properties and damage behaviour of casting components. This research offers valuable insights into enhancing the durability, formability, and efficiency of aluminium-based materials.

The second chapter focuses on the rapidly evolving field of polymer science and composite materials. With the growing demand for high-performance, lightweight, and versatile materials, the articles in this chapter explore advancements in the synthesis of polymeric membranes for seawater desalination and the creation of composites with superior ballistic performance.

The latest chapter addresses one of the most pressing global challenges - environmental pollution and waste treatment. This chapter highlights research on waste recycling technologies and assessment techniques for soil contamination at the sites of explosions.

This special edition showcases comprehensive examinations of technological innovations in materials science, machinery and environmental safety, making this edition an essential resource for researchers and engineers striving for sustainable progress in the modern world.

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