1. Record Nr. UNINA9911049173603321

Autore	Wang Shuxin
Titolo	Advances in Mechanical Transmission: Innovations and Applications : Selected Contributions from 2025 International Conference on Mechanical Transmission (ICMT 2025), Volume 1 / / edited by Shuxin Wang, Datong Qin, Fei Liu
Pubbl/distr/stampa	Singapore : , : Springer Nature Singapore : , : Imprint : Springer, , 2026
ISBN	981-9536-46-4
Edizione	[1st ed. 2026.]
Descrizione fisica	1 online resource (1537 pages)
Collana	Lecture Notes in Mechanical Engineering, , 2195-4364
Altri autori (Persone)	Wang
Disciplina	620.1
Soggetti	Mechanics, Applied Industrial engineering Production engineering Engineering Mechanics Industrial and Production Engineering
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Sommario/riassunto	This book compiles cutting-edge research from the 2025 International Conference on Mechanical Transmission (ICMT 2025), systematically exploring theoretical breakthroughs and industrial innovations in mechanical transmission. The content spans new transmission theories and modeling methods (e.g., digital twin-driven lifecycle design), smart materials (composites/polymers), green manufacturing technologies, and AI-integrated optimization strategies for transmission systems. The book focuses on addressing core challenges such as fatigue reliability, NVH (Noise, Vibration, and Harshness) behavior, and energy efficiency improvement, while showcasing industrial applications of smart gears and bearings, predictive maintenance algorithms, and sustainable lubrication technologies. The content uniquely integrates a "precision-green-intelligent" manufacturing paradigm, offering interdisciplinary solutions. For example, it demonstrates closed-loop optimization of transmission systems from design to testing via digital twin technology and enhances the reliability of industrial robots and

wind turbines through AI-driven fault diagnosis. Bridging academia and industry, this book supports the development of efficient, low-noise, and low-carbon next-generation transmission systems for aerospace, new energy vehicles, marine equipment, and beyond.