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Nota di contenuto	1. Modeling local product development through multidisciplinary collaboration: A case study in Nagara, Chiba Prefecture in Japan -- 2. Developing reusable packaging for FMCG: Consumers' perceptions of benefits and risks of refillable and returnable packaging systems -- 3. Design, evaluation, and acceptance of advanced energy efficient houses for Thailand -- 4. Explore the Framework Construction of Gamification Applied to Basic Design Teaching -- 5. Future Design Based Policy Making Card Game For High School Education -- 6. Frugal innovation in

BoP communities: co-design of a technical solution to support community agriculture in Mexico -- 7. Exploring frugal innovation as an eco-design strategy: a case study of a water access solution at the BoP -- 8. A methodical concept for the development of sustainable products through radical innovations -- 9. Thinking Model for Japanese Small and Medium-sized Enterprises Innovation Explicated by OntoIS -- 10. Applying regenerative sustainability principles in manufacturing -- 11. The Potential for Reverse Innovation in Sustainable Development: A Knowledge-Directed Outlook -- 12. Finding applications for secondary raw materials -- 13. Digital product passports in circular economy – case battery passport -- 14. Data Platforms as tools for circular economy -- 15. Artificial Intelligence for Process Control In Remanufacturing -- 16. Machine Recognition of ICs in Recycling Process of Small-sized Electronics -- 17. Exploring new way media information of the product that promote sustainable consumption and production -- 18. Towards digital circular design -- 19. Circular furniture design: A case study from Swedish furniture industry -- 20. Current challenges in the lifetime extension of smartphones -- 21. Dielectric Elastomer Transducer (High Efficiency Actuator and Power Generation System) -- 22. Sustainable Services in Convenience Stores: a case study of food loss label -- 23. An Overview of Sustainability Held During 1992 to 2021 in China - An Industrial Design Perspective -- 24. Increased personal protective and Medical Equipment manufacturing to fight COVID-19: an egregious approach for the environment -- 25. Silver Recovery from Spent Photovoltaic Panel Sheets using Electrical Wire Explosion -- 26. Procedure Model to support the Recycling-oriented Design of Lithium-Ion Batteries for Electric Vehicles -- 27. Holistic Eco-design Framework Developed Through a Case Study in the Automotive Industry -- 28. Depth and detail or quick and easy? Benefits and drawbacks of two approaches to define sustainability criteria in product development -- 29. Designing Interventions for Sustainability: A conceptual framework for information scoping in the design research phase -- 30. A Sustainable Product Service System (PSS) Design for Retail Food Loss and Waste: Research Through Design -- 31. Environmental and Economical Design Problem of Upgrading and Remanufacturing Option Selection -- 32. Renewable Energy System in the Off-grid Communities: The Systems' Characteristics and Storage Technologies -- 33. Optimal Cooling Strategy for Energy Management using Multi-Temperature Acquisition Points in a Protected Cropping Facility -- 34. Price – based demand response programs considering fixed and dynamic price elasticity matrix (PEM) of demand in the wholesale market in Japan -- 35. Wind Turbine Minimum Power Loss Optimization, using Nonlinear Mathematical Programming.

Sommario/riassunto

This 2-volume book highlights cutting-edge ecodesign research and covers broad areas ranging from individual product and service design to social system design. It includes business and policy design, circular production, life cycle design and management, digitalization for sustainable manufacturing, user behavior and health, ecodesign of social infrastructure, sustainability education, sustainability indicators, and energy system design. Featuring selected papers presented at EcoDesign 2021: 12th International Symposium on Environmentally Conscious Design and Inverse Manufacturing, it also includes diverse, interdisciplinary approaches to foster ecodesign research and activities. In the context of Sustainable Development Goals (SDGs), in particular SDG 12 (Responsible Consumption and Production), it addresses design innovations for sustainable value creation, considering technological developments, legislation, and consumer lifestyles. Further, the book discusses the concept of circular economy, which aims to develop

circular business models for resource efficient society by taking advantage of digital technologies including artificial intelligence, internet of things, digital twin, data analysis and simulation. Written by experts from academia and industry, Volume 1 highlights sustainable design such as product and process design, collaborative design, sustainable innovation, digital technologies, design methodology for sustainability, and energy system design. The methods, tools, and practices described are useful for readers to facilitate value creation for sustainability.
