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Small-scale Hydropower and Energy Recovery Using Water Hammer Effects

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This is an overview of the principles and practical applications of small-scale hydropower and energy recovery using water hammer effects. It offers new insights for engineers, technicians, and students alike, bridging the gap between theory and practice. The book shows that the excessive working pressure of water transmission lines has led to an increase in water accidents and water loss and how this excessive pressure of water can be converted to electrical power.

Inside this book, you will also find:

- In-depth explanations and visual aids along with numerous explanatory figures.
- Detailed discussions on key concepts, making complex ideas accessible and understandable.
- The standard and advanced protective measures, and thorough risk assessment methodologies to ensure the safety and reliability of hydropower systems.
- The hydraulic analysis, based on the simulation of Hammer, Fluent, Gambit, and ANSYS Meshing software by selecting the most suitable location for installing the hydro generator for dumping the excessive working pressure.
- Practical advice through networked sensors, and the Internet of Things (IoT) on effectively control water excessive working pressure and how to convert this pressure to electricity power in a district metering area (DMA).

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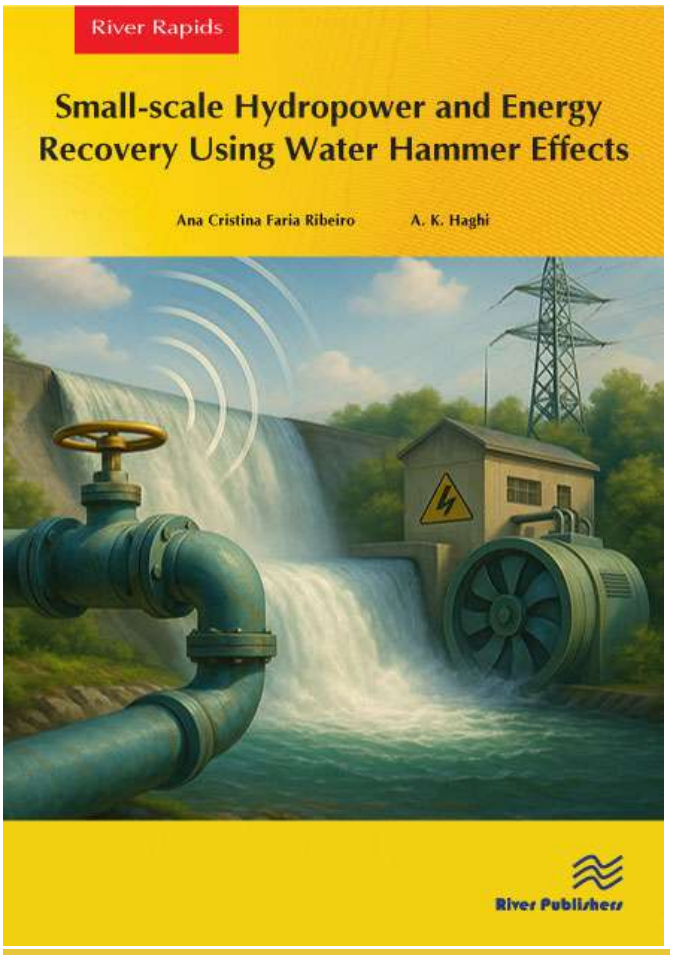

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Water distribution network, water transmission line, water hammer, water excessive pressure, electricity power, piping system, hydraulic analysis, Internet of Things (IoT), district metering area (DMA), hydro generator.

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