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Autore	Sörgel Franziska
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Sommario/riassunto

Innovation is ubiquitous and has become a universal term that is indispensable to describe interventions, projects, or products. Franziska Sörgel argues that emotions influence innovations as they are inherent in initial ideas, expectations and habitual evaluation criteria that impact the development process. Instead of assuming that the innovation process is subject to rational and linear creativity, the study adopts the notion of 'moral economies' by Lorraine Daston as a space for negotiation. Such an approach enables decision-makers to question the evaluation criteria and patterns for technological developments before implementing them in society.

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Autore	Rufe Alfred
Titolo	Semi-Rotary and Linear Actuators for Compressed Air Energy Storage and Energy Efficient Pneumatic Applications
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ISBN	9789815179095 9815179098
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Nota di contenuto	Cover -- Title -- Copyright -- End User License Agreement -- Contents -- Preface -- Introduction and Summary -- 1. INTRODUCTION -- 1.1. Historical Background of the Development: The System Gallino -- 1.2. Contents of the Book -- Compressed Air Systems and Storage -- 1. THE PHYSICAL PRINCIPLES RELATED TO COMPRESSED AIR -- 1.1. Adiabatic, Polytropic and Isothermal Compression and Expansion -- 2. ADVANTAGES AND DRAWBACKS OF CLASSICAL PNEUMATIC DEVICES -- 2.1. Energy Loss due to the use of a Pressure Reduction Valve -- 2.2. The Poor Energetic Performance of the Classical Pneumatic Actuators -- 3. COMPRESSED AIR ENERGY STORAGE WITH LOW PRESSURE - THE UNDERWATER CAES -- 3.1. The Model of the Storage Infrastructure -- 3.2. Examples of UWCAES Realizations -- Increasing the Energetic Efficiency of Pneumatic Devices -- 1. RECOVERY OF THE PNEUMATIC ENERGY -- 1.1. Operating Principle, Defaults and Improvements of the Truglia Motor -- 1.2. Expansion in a Separated Chamber with Sequential Strokes (The MDI Motor) -- 1.3. Expansion in a Separated Chamber with Reciprocating Strokes -- Coupling Two Rotary-Type Actuators -- 1. CONTEXT AND MOTIVATION -- 1.1. Structure of the System -- 1.2. The Mechanical Motion Rectifier -- 1.3. Operating Principle -- 2. SIMULATION OF THE SYSTEM -- 2.1. Parameters of the System -- 2.2. The Pressure Variation During the

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Sommario/riassunto

This text explains the use of compressed air for energy storage and efficient pneumatic applications. Chapters cover the elementary physical and engineering principles related to compressed air, including compression and expansion characteristics, adiabatic, polytropic, and isothermal phenomena, and energy content within a given volume. The author also discusses the advantages and drawbacks of pneumatic technology and presents innovative ways to increase the energetic efficiency of pneumatic actuators. A key highlight of the book is the introduction of a method to enhance energetic efficiency by incorporating expansion work alongside constant pressure displacement. The author presents an analysis of various cylinder assemblies where energy efficiency is notably improved compared to conventional pneumatic actuators. The book serves as a primary reference for mechanical engineering students and as a handbook for engineers designing efficient pneumatic devices. Key Features:

- Fundamental and advanced information about actuators and their pneumatic applications
- Focus on energy efficiency testing
- Systematic chapter order for effective learning progression, with a working example to support comprehension
- References for further reading
- Appendices providing additional insights and resources

Readership: Mechanical engineering students and engineers working on pneumatics.