

Turbine device in air energy storage





Overview

Is a second-generation compressed air energy storage system dynamically safe?

Dynamic safe operation up to 50 g/s air at 80 kW with no TOT peaks. The aim of this paper is the dynamic analysis of a small-size second-generation Compressed Air Energy Storage (CAES) system. It consists of a recuperated T100 micro gas turbine, an intercooled two-stage reciprocating compressor and an artificial tank for air storage.

What is compressed air energy storage (CAES)?

As the world transitions to decarbonized energy systems, emerging long-duration energy storage technologies are crucial for supporting the large-scale deployment of renewable energy sources. Compressed air energy storage (CAES) is a promising solution for large-scale, long-duration energy storage with competitive economics.

What are the different types of compressed air energy storage systems?

Regardless of size, traditional compressed air energy storage (CAES) systems can be classified based on the compression method into three main categories: diabatic (D-CAES), adiabatic (A-CAES), and isothermal (I-CAES) systems. D-CAES systems dissipate the heat generated during compression into the environment.

How does a ae-t100 micro gas turbine work?

This paper presents a dynamic analysis on an AE-T100 micro gas turbine coupled with a small-size second-generation CAES system. It consists of a two-stage reciprocating compressor with intercooling and aftercooling, an artificial vessel for storing compressed air and an additional recuperator for air pre-heating.



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