Università di Pisa

DICI – Dipartimento di Ingegneria Civile e Industriale

Advantages of Sequential Combustion of Hydrogen-Natural Gas Mixtures in Gas Turbines using the Ansaldo Energia GT36 as an Example

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26 settembre

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h 16.30

Gas turbines play a central role in power generation and will become increasingly important in supporting renewables, ensuring grid stability against their intermittency. Hydrogen, with its CO_2-free combustion, is considered a key enabler for decarbonization, but its high reactivity challenges conventional combustion systems and limits performance. Ansaldo Energia’s GT36 gas turbine addresses this with Constant Pressure Sequential Combustion (CPSC), a technology that combines two complementary combustion stages (flame propagation and auto-ignition) allowing high-temperature, low-emission operation with exceptional fuel flexibility. The talk will present the CPSC concept, its advantages for hydrogen combustion, and provide an overview of Ansaldo Energia’s combustor development and validation processes.