

Dutch Section of the Combustion Institute
WEBINAR 16

Friday May 26, 2022, 13:00-14:00 (CET)

Combustion of hydrogen rich fuels in process heaters. Influence on thermal performance, emission characteristics and safety aspects

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Join Zoom Meeting: <https://tudelft.zoom.us/j/98072522802>

ABSTRACT

The use of pure H₂ as fuel is not a new concept for academics and a number of different industries (Aerospace, Petrochemical, Pharmaceutical, etc.), so why the Power and Oil & Gas industry is facing big challenges in switching their process heaters to H₂ firing?

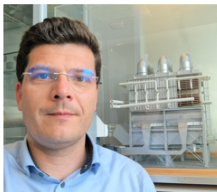
This paper will cover the technical aspects and the design implications for using H₂ as fuel for Process Heaters. Any economical/financial considerations around firing H₂ will not be covered by this study.

The good news is (spoiler alert!) that H₂ firing is technically possible for process heaters, the bad news is that it is not always easy and sometimes it will require to demolish the existing heater and build a completely new equipment.

The focus of this presentation will be on:

- How process heaters are controlled and safeguarded in the industry
- How the combustion of H₂ rich fuels influences the overall equipment performance (Thermal profile and emissions)
- Safety and design aspects to consider when H₂ rich fuels are fired in an industrial installation

About me



STEFANO MANIA
SENIOR HEAT TRANSFER ENGINEER
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- 17 years in the industry
- Global SME for FD furnaces and Burners
- Technical focal point for safe H₂ firing
- API/ISO reviewer/member, currently working in:
 - Development of the new standard ISO5133 "protective systems for Fired Heaters" replacing EN746
 - Support for revision of the new edition of API560, API561, API535 and API556
- I am Italian (born and raised in the sunny Sicily island)
- I am father of two boys aged 12 and 11 years old
- I play the piano and practice Jujitsu martial art since I was a little kid
- I have recently started a new hobby enjoying fishing with my sons