



Bu proje Avrupa Birliği ve Türkiye Cumhuriyeti tarafından finanse edilmektedir
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International Brokerage Event on Clean Hydrogen Partnership 2024 Call



Online

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Organization: Erciyes University

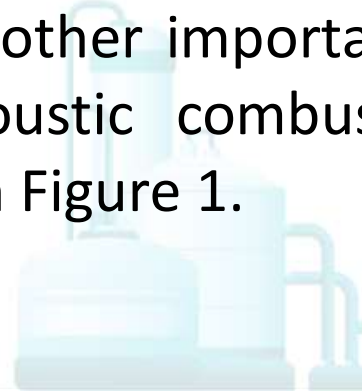
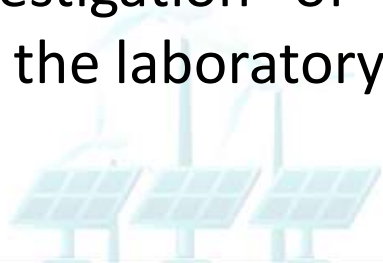
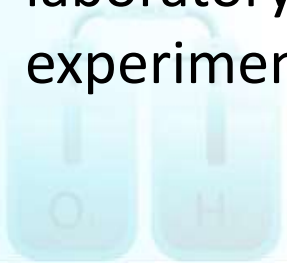
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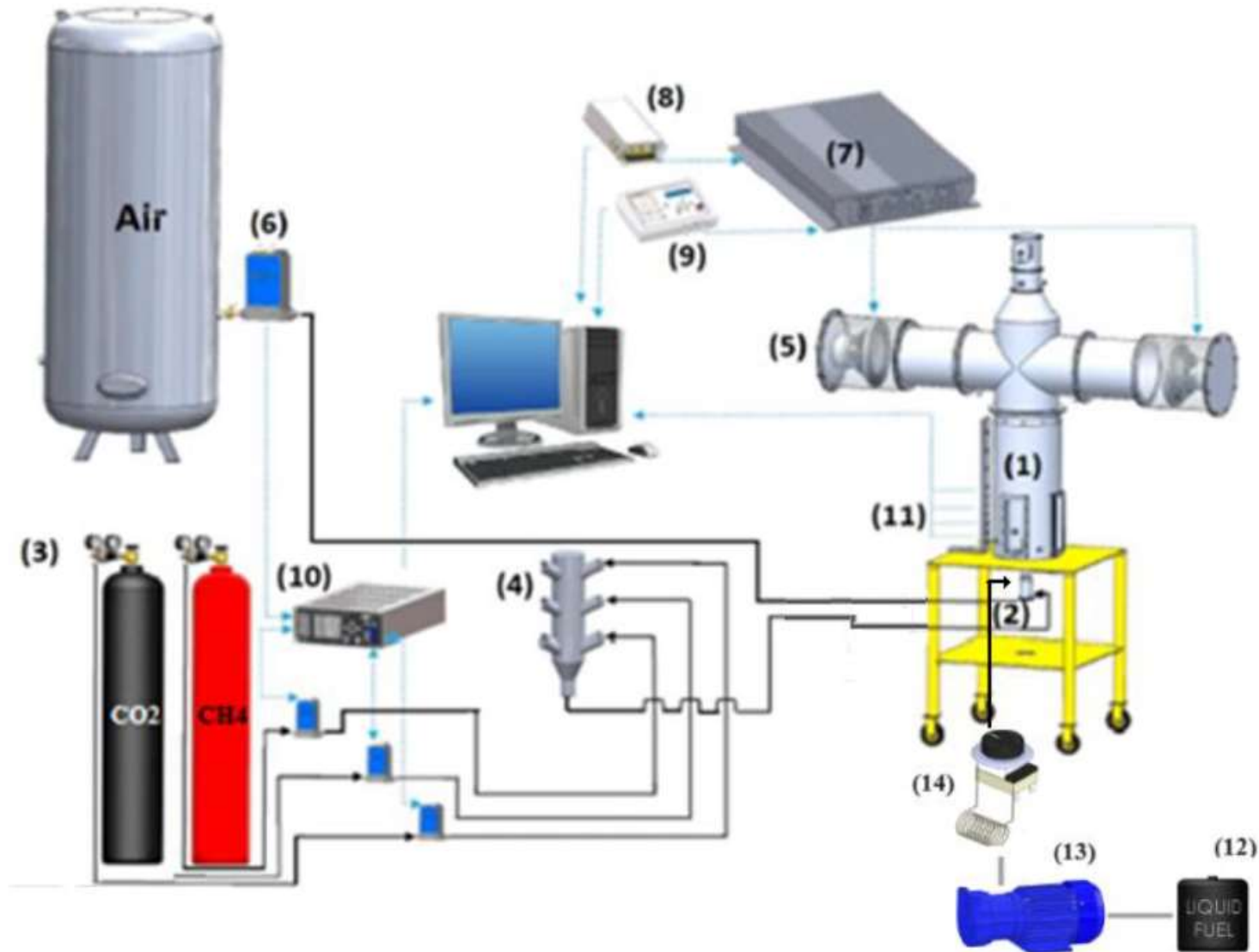
Description of the Organization



Erciyes University Faculty of Aviation and Astronautics, combustion and fuels working group. After the group was founded by Professor İlker Yılmaz, he transferred to Gazi University. Then, research is continued by Dr Buğrahan Alabaş and Dr Murat Taştan. The project group is one of the rare laboratories that can test both jet fuels and alternative gas fuels simultaneously. There are more than 10 WOS index articles on the low-emission combustion of previously gaseous fuels and the addition of alternative fuels such as Hydrogen, Biogas and Ammonia. In addition, the project to determine the performance of jet fuels continues under the leadership of Buğrahan Alabaş with the support of Erciyes University. Dr. Buğrahan Alabaş is carrying out his postdoctoral studies at Universidad de Politecnica Madrid Another important issue studied in the laboratory is the investigation of thermo-acoustic combustion instabilities. The experimental system in the laboratory is shown in Figure 1.



•Hydrogen End Uses: Clean Heat And Power



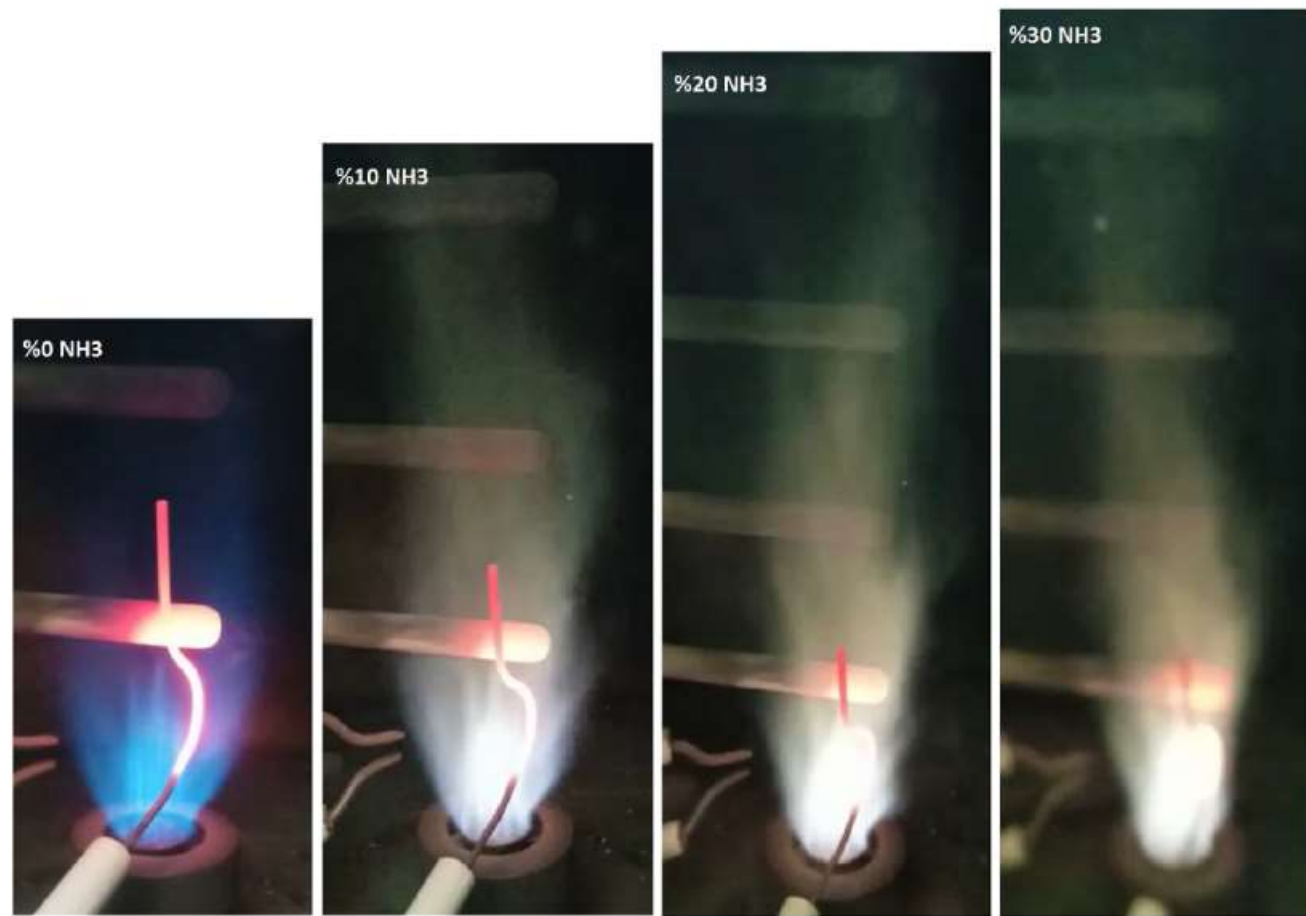
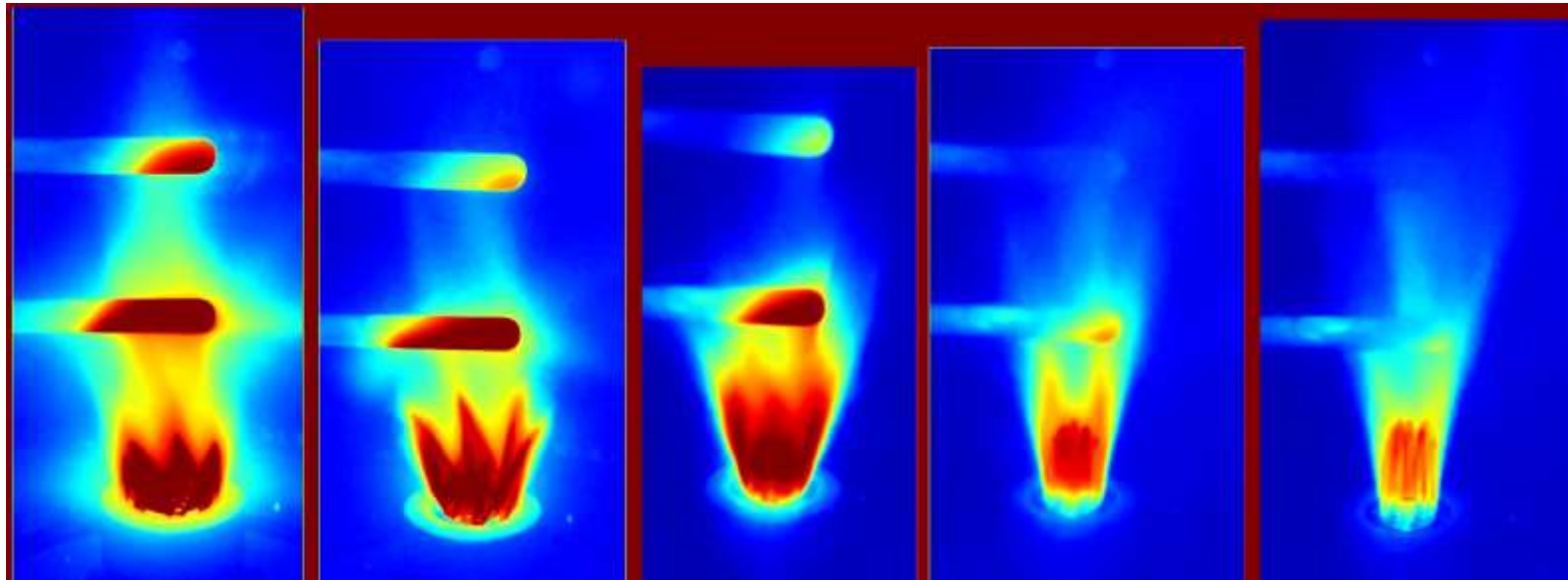
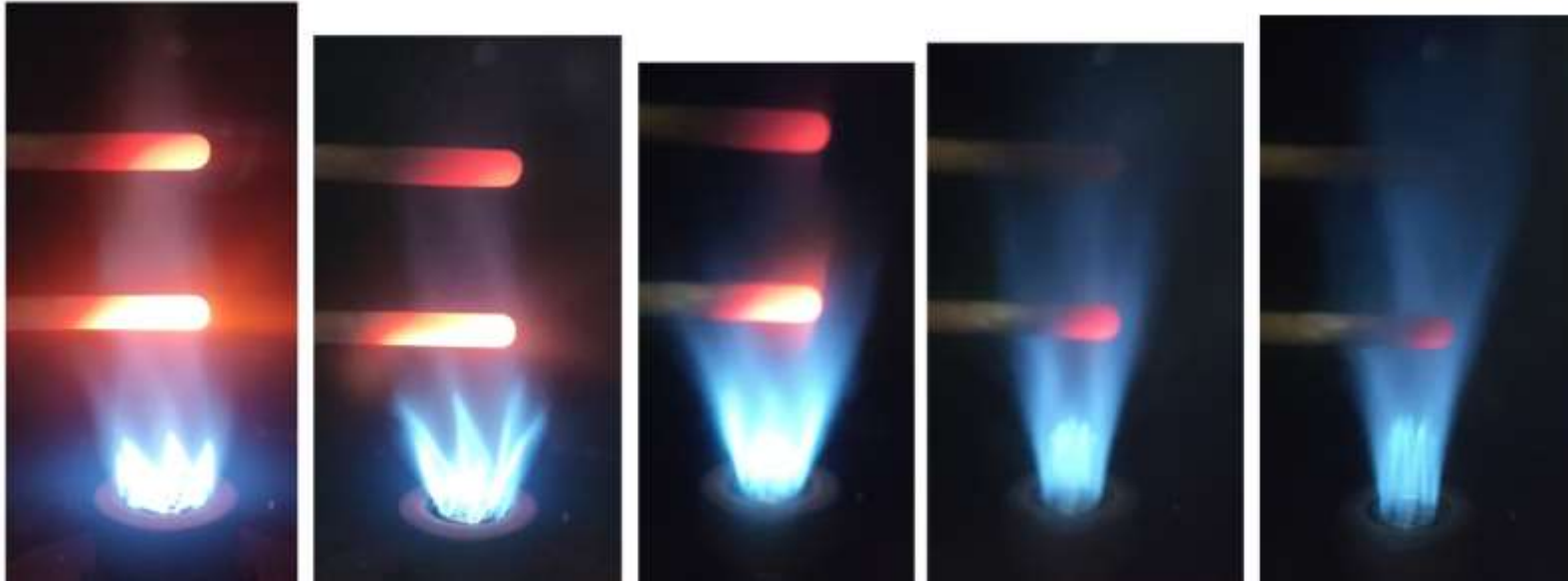
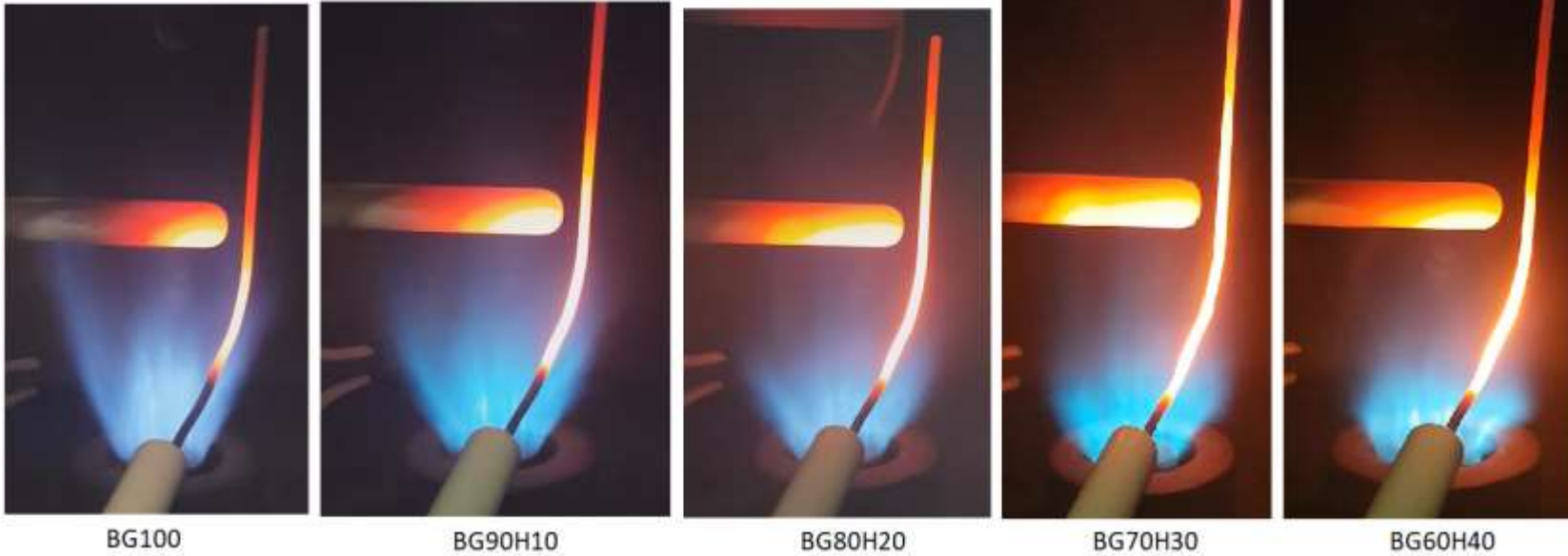


Fig. 8. The effect of ammonia addition on the flame image.





HORIZON-JTI-CLEANH2-2024-04-02: Improved characterisation, prediction and optimisation of flame stabilisation in high-pressure premixed hydrogen combustion at gas-turbine conditions

Papers

- ✓ Effect of oxygen enrichment of Biogas-Hydrogen mixtures in a premixed combustor on the combustion instability and emissions
- ✓ Investigation of combustion instability of propane fuel enriched with oxygen under acoustic enforcement
- ✓ Examination of combustion characteristics of oxygen enriched synthetic gases mixtures at various acoustic frequencies
- ✓ Experimental investigation of the flame characteristics of a fuel mixture with high hydrogen content enriched with oxygen under the externally acoustic enforcement conditions
- ✓ Effect of oxygen enrichment on the flame stability and emissions during biogas combustion: An experimental study
- ✓ Experimental investigation of the oxygen enrichment in synthetic gases flames
- ✓ Experimental investigation of the combustion instability behaviors and NO_x emissions in an ammonia/methane fueled low eddy premixed burner
- ✓ Effect of biogas addition on combustion instability of propane flame at different external acoustic enforcement frequencies
- ✓ Effect of N₂ dilution on combustion instabilities and emissions in biogas flame
- ✓ Equivalence Ratio Effect on Helium Diluted Methane Jet Flame Temperature and Pollutant Emission for a Swirl Assisted Gas Turbine Burner

- ✓ Effect of helium dilution on the dynamic stability of lean pre
- ✓ "Experimental Investigation of Effects of The Ratio of Swirler Hub Diameter to Outer Diameter (D_h/D_o) on Synthetic Gas Flames: Part 2: Dynamic Flame Behaviour at Externally Altered Acoustic Conditions mixed methane flame in a model gas turbine combustor
- ✓ Comparison of Combustion and Emission Characteristics of Output Synthetic Gas Compositions of Two Different Power Stations
- ✓ Yüksek H_2/CO Oranına Sahip Sentetik Gaz Yakıtların Yanma Karakteristiklerinin Deneysel İncelenmesi
- ✓ Sentetik Gaz Yakıtların Yanma Kararsızlıklarının Deneysel İncelenmesi
- ✓ An Experimental Study on Effect of Swirl Number and Gas Composition on Combustion and Emission Behavior of Premixed $H_2/CO/CNG$ Blending Synthetic Gas Flames in a Novel Combustor
- ✓ Effect of CO_2 Dilution on Premixed $H_2/CO/CNG$ Blending Synthesis Gas Flames
- ✓ Dynamic and Static Flame Behavior of Premixed $H_2/CO/CNG/CO_2$ -Air Mixtures under Externally Modified Acoustic Conditions
- ✓ Experimental Investigation of Premixed $H_2/CO/CNG/CO_2$ Blending Syngas
- ✓ Combustion and Emission Behavior of Premixed $CNG/H_2/CO_2$ Mixture Flames: Effect of Swirl Number and Gas Composition

The research interest can be defined as following:

The research group has previous high-impact studies in the field of combustion. They are an expert team on this subject. Despite this, the search for high value-added projects for implementation continues. To this end; It is desired to participate in projects that create a cycle that includes the production, storage and combustion of Hydrogen, Ammonia and biogas energies. It will contribute greatly to the project team in the field of using fuels in these projects and designing burners that can provide stable combustion.



Consortium - profile of known partners (if any)

No	Partner Name	Type	Country	Role in the Project
01	Universidad de Politecnica Madrid	University	Spain	Production and combustion of fuels
02				
03				
04				
05				
06				

Consortium – required partners

No	Expertise	Type	Country	Role in the project
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