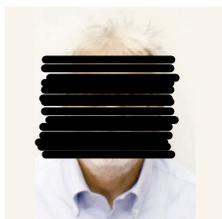


PERSONAL INFORMATION

Raffaele Ragucci



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✉ Raffaele.ragucci@cnr.it

🌐 <http://www.irc.cnr.it/institute/ragucci-raffaele>

Sex male | Date of birth 01/12/1988 | Nationality Italian

Enterprise	University	EPR
<input type="checkbox"/> Management Level	<input type="checkbox"/> Full professor	<input checked="" type="checkbox"/> Research Director and 1st level Technologist / First Researcher and 2nd level Technologist
<input type="checkbox"/> Mid-Management Level	<input type="checkbox"/> Associate Professor	<input type="checkbox"/> Level III Researcher and Technologist
<input type="checkbox"/> Employee / worker level	<input type="checkbox"/> Researcher and Technologist of IV, V, VI and VII level / Technical collaborator	<input type="checkbox"/> Researcher and Technologist of IV, V, VI and VII level / Technical collaborator

WORK EXPERIENCE

01/01/2021 - current

Research Leader

Consiglio Nazionale delle Ricerche - Institute of Sciences and Technologies for Sustainable Energy and Mobility

- Coordination of the activities of the research group on pyrolysis and MILD combustion.

Business or sector Fundamental and Applied Research in Energy & Propulsion

02/01/2004 - 31/12/2020

Senior Researcher

Consiglio Nazionale delle Ricerche - Institute of Research on Combustion

- Coordination of the activities of the research group on pyrolysis and MILD combustion of the former Institute of Research on Combustion (IRC) of the CNR.
- Member of the IRC board from 2015 up to 2020.

Business or sector Fundamental and Applied Research in Energy & Propulsion

01/12/1988 - 01/01/2004

Researcher

Consiglio Nazionale delle Ricerche - Institute of Research on Combustion

- Experimental research on:
 - Spray atomization, ignition and combustion in high pressure and high temperature flows.
 - Optical diagnostics of combustion of gaseous and liquid fuels.
 - Digital imaging and data processing for combustion diagnostics
 - Atomization of liquid and slurries for power generation and propulsion.

Business or sector Fundamental and Applied Research in Energy & Propulsion

EDUCATION AND TRAINING

01/10/1979 – 27/07/1984

Degree in Electronical Engineering

Università degli Studi Federico II di Napoli

- Fundamentals and applied aspects of the electronic engineering with a particular focus on the electro-optics, solid matter, optics and interactions, quantum electrodynamics, laser technologies, electromagnetism and advanced mathematical modelling.

PERSONAL SKILLS

Mother tongue(s) Italian

Other language(s)	ENGLISH Listening C1 Reading C2 Writing C2 Spoken production C2 Spoken interaction C2
Job-related skills	Thermochemical energy conversion systems design and development Diluted and low temperature combustion processes and technologies Optical diagnostics of reacting systems System automation and control Chemical kinetics of combustion processes High pressure combustion processes Pyrolytic processes for energy and material recovery Numerical methods for data analysis
Digital skills	NI LabVIEW advanced user / Image acquisition and elaboration softwares / Reactive-CFD packages (user) / Fortran (professional experience) / Knowledge of C, C++, Python / Advanced knowledge of MacOS, Windows and LINUX operating systems / Apple Works / Microsoft Office / MathLab (Basic)
Other skills	Technical Officer of Italian Athletics Federation National Road Race Courses Certifier

ADDITIONAL INFORMATION

Publications **relevant** publications in the **past 5 years**

Ammonia oxidation regimes and transitional behaviors in a Jet Stirred Flow Reactor
[2021]

<https://doi.org/10.1016/j.combustflame.2021.02.014>
Combustion and Flame 228, 388-400

Alcohols as Energy Carriers in MILD Combustion
[2021]

<https://doi.org/10.1021/acs.energyfuels.0c03862>
Energy & Fuels, 35, 7253-7264

MILD combustion and biofuels: A minireview
[2021]

<https://doi.org/10.1021/acs.energyfuels.1c02973>
Energy Fuels 2021, 35, 24, 19901-19919

Mini-Review: Heat Transfer Mechanisms in MILD Combustion Systems
[2021]

<https://doi.org/10.3389/fmech.2021.505923>
Front. Mech. Eng. 7:505923

Insights about the effect of composition, branching and molecular weight on the slow pyrolysis of xylose-based polysaccharides
[2021]

<https://doi.org/10.1016/j.jaap.2021.105369>
Journal of Analytical and Applied Pyrolysis 161, 105369

Inherent metal elements in biomass pyrolysis: A review
[2021]

<https://doi.org/10.1021/acs.energyfuels.0c04046>
Energy & Fuels 35 (7), 5407-5478

Reactive Structures of Ammonia MILD Combustion in Diffusion Ignition Processes
[2021]

<https://doi.org/10.3389/fenrg.2021.649141>
Frontiers in Energy Research, 659

Thermo-chemical manifold reduction for tabulated chemistry modeling. Temperature and dilution constraints for smooth combustion reactors
[2020]

<https://doi.org/10.1016/j.proci.2020.06.144>
Proceedings of the Combustion Institute 38 (4), 5393-5402

Influence of water addition on MILD ammonia combustion performances and emissions
[2020]

<https://doi.org/10.1016/j.proci.2020.06.143>

Proceedings of the Combustion Institute 38 (4), 5147-5154
Mutual inhibition effect of hydrogen and ammonia in oxidation processes and the role of ammonia as “strong” collider in third-molecular reactions
[2020]
<https://doi.org/10.1016/j.ijhydene.2020.08.218>
International Journal of Hydrogen Energy 45 (56), 32113-32127
Ammonia oxidation features in a Jet Stirred Flow Reactor. The role of NH₂ chemistry
[2020]
<https://doi.org/10.1016/j.fuel.2020.118054>
Fuel 276, 118054
Oxidation and pyrolysis of ammonia mixtures in model reactors
[2020]
<https://doi.org/10.1016/j.fuel.2019.116768>
Fuel 264, 116768
Biochar as improver of methane production in anaerobic digestion of food waste
[2020]
<https://doi.org/10.5890/JEAM.2020.09.005>
Journal of Environmental Accounting and Management 8 (3), 267-279
Diffusion Ignition Processes in MILD Combustion: A Mini-Review
[2020]
<https://doi.org/10.3389/fmech.2020.00010>
Frontiers in Mechanical Engineering 6, 10
The role of dilution level and canonical configuration in the modeling of MILD combustion systems with internal recirculation
[2020]
<https://doi.org/10.1016/j.fuel.2019.116840>
Fuel 264, 116840
Low-NO_x conversion of pure ammonia in a cyclonic burner under locally diluted and preheated conditions
[2019]
<https://doi.org/10.1016/j.apenergy.2019.113676>
Applied Energy 254, 113676
About the influence of doping approach on the alkali metal catalyzed slow pyrolysis of xylan
[2019]
<https://doi.org/10.1155/2019/9392571>
Journal of Chemistry 2019
Steam assisted slow pyrolysis of contaminated biomasses: Effect of plant parts and process temperature on heavy metals fate
[2019]
<https://doi.org/10.1016/j.wasman.2018.12.028>
Waste Management 85, 232-241
Fuel and thermal load flexibility of a MILD burner
[2018]
<https://doi.org/10.1016/j.proci.2018.09.003>
Proceedings of the Combustion Institute 37 (4), 4547-4554
Influence of preheating and thermal power on cyclonic burner characteristics under mild combustion
[2018]
<https://doi.org/10.1016/j.fuel.2018.06.049>
Fuel 233, 207-214
Removal of Very Small Submicrometric Particles by Water Nucleation: Effects of Chemical-Physical Properties of Particles
[2018]
<https://doi.org/10.1021/acs.energyfuels.8b01142>
Energy & Fuels 32 (10), 10285-10294
Numerical investigation of moderate or intense low-oxygen dilution combustion in a cyclonic burner using a flamelet-generated manifold approach
[2018]
<https://doi.org/10.1021/acs.energyfuels.8b01099>
Energy & Fuels 32 (10), 10242-10255
Assessing the Potential of Biochars Prepared by Steam-Assisted Slow Pyrolysis for CO₂ Adsorption and Separation
[2018]
<https://doi.org/10.1021/acs.energyfuels.8b01058>
Energy & fuels 32 (10), 10218-10227
Torrefaction of woody waste for use as biofuel

- [2018]
<https://doi.org/10.1021/acs.energyfuels.8b01136>
 Energy & Fuels 32 (10), 10266-10271
Effect of alkali metal ions presence on the products of xylan steam assisted slow pyrolysis
- [2017]
<https://doi.org/10.1016/j.fuel.2017.11.150>
 Fuel 216, 36-43
Modeling the impact of the presence of KCl on the slow pyrolysis of cellulose
- [2017]
<https://doi.org/10.1016/j.fuel.2017.11.019>
 Fuel 215, 57-65
Impact of external operating parameters on the performance of a cyclonic burner with high level of internal recirculation under MILD combustion conditions
- [2017]
<https://doi.org/10.1016/j.energy.2017.05.135>
 Energy 137, 1167-1174
Unresolved issues on the kinetic modeling of pyrolysis of woody and nonwoody biomass fuels
- [2017]
<https://doi.org/10.1021/acs.energyfuels.6b03445>
 Energy & Fuels 31 (4), 4035-4044
Pyrolysis for exploitation of biomasses selected for soil phytoremediation: Characterization of gaseous and solid products
- [2017]
<https://doi.org/10.1016/j.wasman.2017.01.031>
 Waste Management 61, 288-299
Small size burner combustion stabilization by means of strong cyclonic recirculation
- [2017]
<https://doi.org/10.1016/j.proci.2016.06.070>
 Proceedings of the Combustion Institute 36 (3), 3361-3369

Networks and memberships

- 01/09/2021 – Current **Member of the International ILASS Council**
- The International ILASS Council is the international umbrella organization of all the regional ILASS association. It holds the international representatives of all the ILASS members, decides on the general policies of the regional divisions, and assign the international scientific awards of the association.
- 2003 – Current **Member of the board of the Institute for Liquid Atomization and Spray System - European Section**
- ILASS has the objective of promoting the science and application of liquid atomization and spray systems by means of: sponsorship of annual scientific meetings, promotion and preparation of technical papers, and promotion of membership in ILASS Europe among interested and qualified persons and industrial entities resident in the geographical area of Europe.
- 2015 – 2019 **Member of the management committee of the European COST Action SMARTCATS**
- SMARTCATS COST Action aimed to set-up a Europe-wide network of leading academic and research institutions and key industries to promote the use of smart energy carriers on a large scale in order to increase fuel flexibility and carbon efficiency of energy production and to support distributed energy generation strategies. In this framework I acted as web and dissemination manager of the Action.
- 2010 – 2016 **Member of The International Board of Directors of the Combustion Institute**
- The Board of Directors manages the affairs, property, and interests of The Combustion Institute. As such I participated in many committee and initiatives of the Institute.
- 2005 – 2010 **Chairman of the Italian Section of the Combustion Institute**
- The Combustion Institute is an international, non-profit, educational and scientific society. Founded in 1954, CI promotes and disseminates research activities in all areas of combustion science and technology for the advancement of many diverse communities around the world. The Italian Section has been embodied in 1954 to promote and coordinate the CI in Italy.

