

14th International Workshop on Combustion and Propulsion (IWCP)



Micro- and Nano-Sized
Advanced Energetic Materials
for Propulsion and Energetic
Applications

28 - 31 July 2024

&

Guided Tour of Abruzzo

1 - 3 August 2024

Venue:

**Aurum, Largo Gardone Riviera,
65126 Pescara, PE, Italy.**



www.iwcp2024.com

ABOUT IWCP

14th International Workshop on Combustion and Propulsion



The International Workshop on Combustion and Propulsion (IWCP) was initiated in 1990 by the SPLab of Politecnico di Milano to bridge East and West bloc researchers in combustion and rocket propulsion. Italy's strategic location aided this global scientific dialogue. IWCP emphasizes open technical discussions, favoring in-depth conversations over formal presentations. Its format includes Plenary Lectures by prominent speakers and encourages interactive audience participation. Attendance is limited to invitees with notable expertise or innovative perspectives, ensuring quality discussions. Costs are minimized to facilitate broader participation and social interaction, with a focus on disseminating findings internationally.

The inaugural IWCP in 1990, held in Milan, addressed "Transient combustion and stability of solid propellants," marking a pioneering meeting between US and Russian scientists in solid rocket propulsion. The outcomes of these workshops are compiled into reports for sponsors and have continually advanced the global understanding of energetic material combustion and rocket propulsion. The 14th IWCP aims to include major stakeholders in rocket propulsion, maintaining the series' legacy.

ABOUT 14-IWCP

This workshop explores innovative nEMs and μ EMs ingredients as well as formulations. It provides a comprehensive survey of advanced technology on preparation, characterization, combustion, and performance in potential applications for propellants and explosives. It summarizes the most recent achievements of leading research groups active in the international scene.

OBJECTIVES

The IWCP focuses on the latest advancements and future trends in combustion and propulsion systems, aiming to address the crucial challenges and opportunities in these dynamic fields. This workshop serves as a platform for researchers, scientists, engineers, and industry professionals to:

Share Cutting-edge Research: Present and discuss the latest developments, innovations, and research findings in combustion and propulsion technologies.

Network and Collaborate: Foster collaboration and networking opportunities among global experts, creating avenues for future joint ventures and research collaborations.

Explore New Challenges: Identify and deliberate on emerging challenges, environmental impacts, and sustainability aspects in the sector.

Interact in Planned Sessions: Participate in keynote speeches, panel discussions, technical sessions, and poster presentations, all designed to stimulate learning and creative thinking.

Whether you are an expert in the field, a budding researcher, or a passionate industry professional, the IWCP offers a unique opportunity to expand your knowledge, share your work, and connect with a global community. Join us in Pescara to be a part of this stimulating discussion on the future of combustion and propulsion technology.

 Sun - 28 July

Welcome Party

 29 - 31 July

 **Technical Program**

Every day several oral presentations will be given by recognized international experts. Due to the large number of submissions, a Poster Session will complement the oral presentations.

 Mon - 29 July

 **Plenary Lecture:**

Smart Energetic Materials

by RuiQi Shen, NJUST, China

 **Roundtable:**

Application of Artificial Intelligence and Machine Learning to Novel Energetic Materials

Chaired by Ruth M. Doherty, ETC, USA

Panel of Experts: Victor Abrukov, Russia; Zois Boukouvalas, USA; Adam Cumming, UK

 Tue - 30 July

 **Plenary Lecture:**

Combustion of Metals for Power Generation on Earth and Beyond

by Evgeny Shafirovich, UTEP, USA

 **Roundtable:**

Metal Combustion for Propulsion and Energetic Applications

Chaired by Volker Weiser, ICT, Germany

Panel of Experts: Helmut Ciezki, Germany; Edward Dreizin, USA; Alexander B. Vorozhtsov, Russia

 **Poster Session:** For each poster, the available area is 1 m x 1.5 m.

 Wed - 31 July

 **Plenary Lecture:**

Impact Sensitivity of Cyclic Nitramines

by Svatopluk Zeman, Pardubice University, Czech Rep.

 **Roundtable:**

Insensitive Energetic Materials

Chaired by Qi-Long Yan, NWPU, China

Panel of Experts: Michael Gozin, Israel; Thomas M. Klapötke, Germany; Steve Son, USA



WORKSHOP COMMITTEES

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- **Luigi T. DeLuca (Ret.)**, Politecnico di Milano (PoliMi), Italy
- **Ruth M. Doherty**, Energetics Technology Center (ETC), USA

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- **Mikhail Ilyushin**, Saint-Petersburg State Institute of Technology, Russia
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- **Evgeny Shafirovich**, The University of Texas at El Paso (UTEP), USA
- **RuiQi Shen**, Nanjing University of Science and Technology (NJUST), China
- **Valery P. Sinditskii**, Mendeleev University of Chemical Technology (MUCT), Russia
- **Clive R. Woodley**, UK
- **RongJie Yang**, Beijing Institute of Technology (BIT), China
- **Vladimir E. Zarko**, Institute of Chemical Kinetics and Combustion (ICKC), Russia
- **Svatopluk Zeman**, Pardubice University, Czech Rep.

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- **Ahmed Elbeih**, Military Technical College (MTC), Egypt
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- **Yash Pal**, Hindustan Institute of Technology and Science, India
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- **Djalal Trache**, Ecole Militaire Polytechnique (EMP), Algeria
- **Alexander Vorozhtsov**, Tomsk State University (TSU), Russia
- **Niklas Wingborg**, Defense Research Agency (FOI), Sweden
- **Qi-Long Yan**, Northwestern Polytechnical University (NPU), China
- **Wei Zhang**, Nanjing University of Science and Technology (NJUST), China

Social Program

Explore the beauty of Abruzzo:
Exclusive local tours in Pescara
for companions and guided tours
of Abruzzo for all registered
participants.



IWCP 2024

We are thrilled to offer exclusive local and guided tours of the stunning Abruzzo region, home to our Workshop location in Pescara, Italy. The local tours in and around Pescara for companions are planned 28-31 July. The guided tours including special excursions to an Adriatic Trabocco, Caves of Stiffe, and National Parks are planned 01-03 August and promise a blend of breathtaking scenery, rich cultural experiences, and unforgettable memories.

How to reach Italy

Travel

Visa Application

<https://vistoperitalia.esteri.it/home/en>

By Plane

Flights to Rome or Milan; possibly straight to the Abruzzo airport
Abruzzo Airport (PSR IATA) (less than 10 minutes from the city
stop near Hotel Plaza).

How to Reach Pescara Centre

By Train to Pescara Central Railway Station

The train from Rome takes about four hours but it is a spectacular route through the mountains, through towns such as Avezzano and Sulmona.

By Car

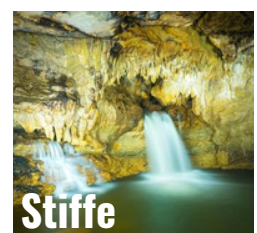
You can drive to Pescara from Rome Ciampino Airport (only low-cost flights) in about 1½ hours and Rome Fiumicino Airport (most international flights) in about 3½ hours. The drive is relatively free of traffic through the mountains, the view is excellent and there are lots of tunnels and bridges to cross.

Lodging in Pescara

Blocks of rooms for those attending the workshop have been reserved at **Hotel Plaza** and **Victoria Hotel**. Since July-August is in the peak tourist season, it is recommended that hotel reservations be made early, to ensure availability of rooms.

A daily shuttle service will be provided between the **Hotel Plaza** and **Aurum**.

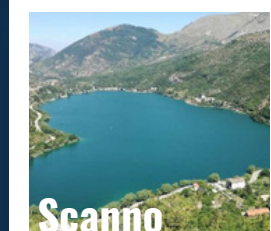
Gran Sasso



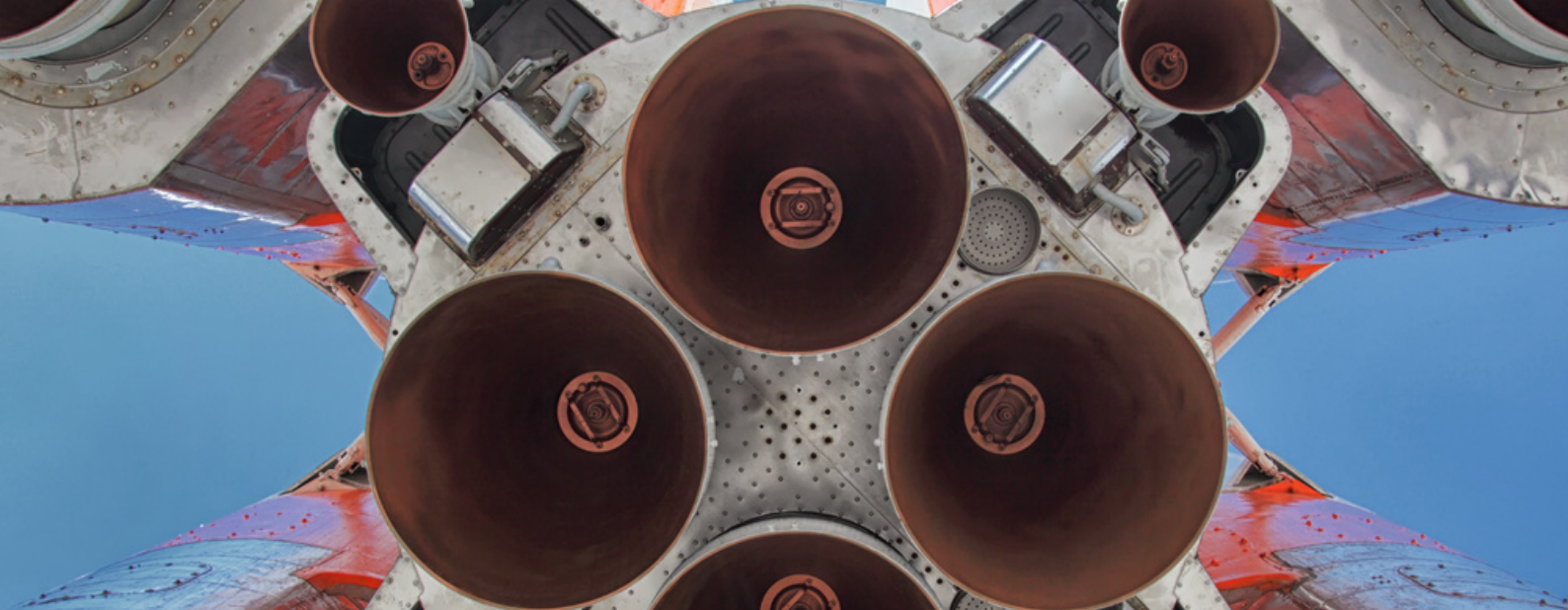
Stiffe



Pescara



Scanno



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Venue:

Sala Tosti and Sala Paziienza,
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65126 Pescara, PE, Italy



Call for Abstracts:

Acceptance of presentation requires a 1-page abstract in English submitted to the chairs by the corresponding author by May 1, 2024. Times New Roman font, 12-point size. All abstracts, whether for oral or poster presentations, will be compiled in a Book of Abstracts to be distributed at the opening of the workshop.



Local Tours in Pescara: 28-31 July 2024

This part of the Social Program is aimed at participants' companions. It includes free entry to the shore, an English-speaking guide for visiting the town, and assistance with shopping. Registration at no cost.



Date:

28 - 31 JULY 2024



Registration Fee:

300 € regular, 150 € students, and 90 € companions.

Your registration includes access to all sessions, workshop materials, welcome party, coffee breaks, a sumptuous lunch buffet, and an unforgettable banquet dinner. Companions only pay for the welcome party and banquet dinner.



Guided Tour of Abruzzo: 01-03 August 2024

The tour of Abruzzo, the region surrounding Pescara, will include a visit with lunch on a Trabocco of the Adriatic Sea, exploration of the underground river of Stiffe, and walks in the National Parks. The cost will be decided based on the number of participants.



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