

**WELCOME MESSAGE FROM  
PROF. TARA DESAI, CHAIR, FPPT-11.**



Dear Delegates,

It is my privilege to extend a warm welcome on behalf of the organisers of the “11th International Conference on the Frontiers of Plasma Physics and Technology”, taking place in Dubrovnik, the jewel of the Adriatic.

It is deeply gratifying to reflect on the journey of this conference series, which has been active for over two decades since its inception in 2002. Over the years, the conference has grown significantly, with the previous ten conferences held across Asia, Africa, and Latin America. We are delighted to host the present one in Europe for the very first time.

Personally, it has been an immensely rewarding journey from the very beginning. It started with a small team of dedicated scientists and supporters. For all of us involved, this series has offered not only a platform for scientific exchange but also a meaningful opportunity to learn, connect, and contribute to our shared pursuit of knowledge in plasma physics.

Our universe contains approximately 99% of its matter in the plasma state since its formation billions of years ago. Yet, the existence of this “fourth state” of matter was first identified in 1879 by Sir William Crookes. The term *plasma* was later introduced by Irving Langmuir (1881–1957) during his experiments on electrical discharges in gases in 1928. While working with mercury vapour discharges and studying ion densities and velocity distributions within mercury arc columns, he observed a medium that seemed to carry high-velocity electrons, gas molecules, and ions like blood plasma transports red and white cells, proteins, hormones, and pathogens. Inspired by this resemblance, the word *plasma* was adopted from medicine into physics. In return, Plasma physics is now playing a pivotal role in advancing medical applications.

Today, plasma physics has become an integral part of modern science and technology, influencing nearly every facet of life. With its growing significance, new areas of research and application continue to emerge. Notable fields include agriculture, air and space pollution control, astrophysics, biology, chemistry, climate science, and environmental protection. Plasma technologies also contribute to high-precision medical diagnostics, industrial processes, nuclear energy and waste management, cultural heritage preservation, and space research.

The mission of this conference series is to bring the event to different countries, especially those where a strong local research community, including many young scholars, can benefit from direct interaction with leading international experts. In essence, it serves as an open platform for meaningful dialogue and the exchange of ideas on topics of mutual interest.

I am pleased to share that our efforts have yielded positive results, with many professionals endorsing and supporting this initiative.

We happily highlight our Conference Theme: *“Promote Sustainable Research and Technology in Different Countries through International Cooperation.”* This vision has been well received and effectively implemented. It reaffirms the vital importance of creating opportunities for young researchers who are eager to pursue and thrive in scientific careers.

The agenda of this conference series encompasses a broad spectrum of exciting and frontier topics in plasma physics, with a particular focus on fundamental research, practical applications, and technological advancements.

These emerging areas continue to spark growing interest in plasma-based science and innovation. During the conference, we will enjoy a series of insightful and engaging presentations that highlight many of these cutting-edge developments.

Plasma physics has made a profound contribution to society. We are hopeful that this global roadmap marked by numerous milestones will continue to evolve and flourish, sustaining its impressive track record.

While this year’s gathering is modest in size with around 70 delegates compared to previous conferences with exceeding a hundred participants, remains equally rich in vision and intellect. This conference brings together the leading experts from 24 countries across all continents, united by their shared commitment to advancing the field of plasma science and technology for the benefit of our society.

Hosting this event in the enchanting city of Dubrovnik, renowned for its romantic charm and historical depth, offers a truly inspiring setting. The calm grandeur of the Adriatic, with its sweeping waves and composed energy, is the perfect backdrop to spark creative thinking and vibrant discussion.

In this atmosphere, we hope to cultivate bold ideas that, through open and thoughtful exchange, can grow into innovations with lasting societal impact. This is the spirit and goal of our conference.

On behalf of the FPPT-11 team, I extend a heartfelt welcome to all our distinguished delegates and accompanying persons.

We look forward to a meaningful and memorable conference in Dubrovnik.

Tara Desai.

Vienna, Austria.

20<sup>th</sup> April 2025