



Report on Attendance at the 52nd EPS Conference on Plasma Physics

The 52nd EPS Conference on Plasma Physics, organised by the Plasma Physics Division of the European Physical Society, took place from 29 June to 3 July 2026 at the Edinburgh International Conference Centre (EICC) in Edinburgh, United Kingdom. This annual conference is one of the largest and most prestigious plasma physics events in Europe, gathering 808 researchers from 32 countries, who presented over 700 scientific reports. The conference covered four core scientific tracks: Magnetic Confinement Fusion, Beam Plasma and Inertial Fusion, Low Temperature Plasmas, and Basic, Space and Astrophysical Plasmas.

My decision to attend was driven by the direct relevance of the conference topics to my ongoing research, as well as the opportunity to engage with the international plasma physics community and present my own work at this flagship meeting.

The scientific programme featured a strong emphasis on the practical realities of plasma research, including diagnostics, plasma control, impurities, plasma–surface interaction, and modelling approaches. A significant portion of the programme was dedicated to magnetic confinement fusion, covering recent advances in tokamak and stellarator experiments, transport physics, and plasma-facing materials. The beam plasma and inertial fusion sessions addressed high-energy-density physics and laser–plasma interactions, while the low-temperature plasma track focused on industrial and fundamental applications, including plasma sources, thin-film processing, and gas-phase chemistry.

Plenary and invited talks delivered by leading researchers highlighted current challenges in plasma control, diagnostics, and scale-up for fusion energy, as well as emerging tools such as quantum computing for plasma simulation. The breadth of the programme enabled cross-fertilisation between fusion, industrial plasmas, and fundamental plasma science.

I actively participated throughout the week, with a particular focus on low-temperature plasma sessions and plasma–surface interactions—areas directly aligned with my research on biopolymer functionalisation. My talk presented our group's recent progress on using non-equilibrium plasma discharges to tailor protein film properties, including surface wettability, cross-linking density, and barrier performance—offering potential routes towards sustainable packaging and bio-sensing applications. The 15-minute presentation was followed by a 5-minute Q&A session, during which I received constructive questions regarding the plasma–protein interaction mechanisms and long-term material stability. Several attendees expressed interest in our approach, particularly the possibility of scaling the process for industrial applications.

The conference provided extensive networking opportunities beyond the formal scientific sessions. The welcome drinks reception on 29 June at the EICC offered an informal setting to meet other attendees, including early-career researchers, established group leaders, and industry representatives. I engaged in conversations with researchers from institutions across Europe and beyond, including groups from Germany, France, Spain, and the Czech Republic.

These interactions were valuable not only for exchanging scientific ideas but also for exploring potential collaborations. I discussed possible joint work with a group working on advanced material synthesis and have followed up with them after the conference. The networking also gave me a clearer perspective on career pathways in plasma physics, particularly regarding postdoctoral opportunities and research directions across European laboratories.

For this trip, I considered sustainable travel options to minimise the environmental impact of my attendance. Given the distance from Belfast to Edinburgh, rail or other surface transport was not a practical alternative. I therefore chose a direct flight with a carbon-efficient carrier to minimise total travel time and emissions, avoiding indirect routes or stopovers that would have increased the overall carbon footprint.

The IET Travel Award has been instrumental in enabling my attendance at this conference. Without this financial support, covering registration, travel, and accommodation would have placed a significant burden on my limited research budget. The knowledge gained from talks and discussions has directly informed my ongoing work. Presenting my work at EPS—one of Europe's leading plasma physics forums—has increased the visibility of my research within the international community. The exposure has already led to follow-up questions and expressions of interest from other groups. I have established new professional connections that I plan to maintain through joint discussions and potential future collaborations. One contact from Czech Technical University in Prague has expressed interest in comparing datasets with mine, which could lead to a co-authored publication.

Attending the conference gave me a clearer understanding of the current research frontiers in plasma physics and the skills required to contribute to them. I am now better prepared to plan the next phases of my PhD work and to consider postdoctoral opportunities in Europe.

The 52nd EPS Conference on Plasma Physics was an intellectually stimulating and professionally valuable experience. The scientific programme was broad yet cohesive, the networking opportunities were abundant, and the feedback I received on my own work has already proved useful. I am grateful to the IET for the Travel Award, which made this participation possible, and I am confident that the knowledge and connections gained will have a lasting impact on my research trajectory.