

IET Travel Award Report

Nexus Forum 2026: Unity in Diversity - Interdisciplinary Perspectives for a Sustainable Future

Zhengguang Liu | Oral Presenter and Session Chair | Rhodes House, University of Oxford | 22-24 July 2026

Background and purpose

With support from the IET National Travel Award, I travelled from Manchester to Oxford to take part in Nexus Forum 2026 at Rhodes House, University of Oxford. Held from 22 to 24 July 2026, the forum brought together researchers, practitioners and academic leaders under the theme “Unity in Diversity: Interdisciplinary Perspectives for a Sustainable Future”. Its programme connected sustainability and environmental engineering with applied artificial intelligence, climate change and carbon neutrality, smart urban carbon analytics, renewable-energy integration and decentralised energy systems.

These themes align closely with my doctoral research and wider interests in low-carbon energy systems, building energy flexibility, renewable-energy integration and data-driven decision support. The award made it possible for me to participate in person, present my research and contribute in a formal academic-service role as a session chair. This was especially valuable at the closing stage of my PhD, when opportunities to test ideas with researchers from neighbouring disciplines and to strengthen professional networks can directly shape future research directions.

Oral presentation on geothermal energy

I also delivered an oral presentation of approximately ten minutes entitled “Repurposing Oil and Gas Fields for Geothermal Energy to Accelerate the Energy Transition”. The presentation examined how depleted oil and gas assets could be given a productive second life by reusing existing wells and infrastructure for geothermal energy. I highlighted the potential role of geothermal heat, thermal storage and combined heat-and-power configurations in dependable low-carbon energy supply, while recognising that economic viability, environmental performance and monitoring requirements must be assessed carefully.

The short format required me to communicate the motivation, system concept and practical implications with precision. Presenting to an interdisciplinary audience connected subsurface energy resources with the forum’s wider discussions on decarbonisation, infrastructure transition and resilient energy systems. Questions and informal conversations also helped me identify which aspects need the clearest explanation for audiences beyond geothermal specialists.

Technical learning and interdisciplinary exchange

A recurring message across the forum was that credible sustainability solutions require more than technical performance in isolation. Energy and carbon interventions need robust data, transparent modelling assumptions and an understanding of how technologies interact with urban systems, institutions and users. Discussions around applied AI and data science were particularly relevant to my work: they highlighted both the potential of data-driven methods and the need to preserve physical interpretability, validation and decision usefulness.

The wider programme made these connections concrete. Keynote and panel topics included climate-resilient infrastructure in coastal cities, sustainability as structural transformation, AI-driven scientific discovery, battery safety for an electrified and decarbonised world, combined mitigation and adaptation, governance for net zero, and digital twins for carbon-neutral and resilient energy systems. The joint panel on Carbon Neutrality and Energy System Transformation further demonstrated why technology, modelling, governance and implementation must be considered together.

These themes provided a useful setting in which to reflect on integrated energy-system questions. Research on renewable integration, decentralised energy and urban carbon analytics demonstrated the value of linking building- and asset-level models with system-level constraints and policy objectives. The discussions complemented my own work on energy demand, flexibility, emissions and low-carbon decision support, while encouraging me to communicate modelling results more clearly to audiences beyond a single technical field.

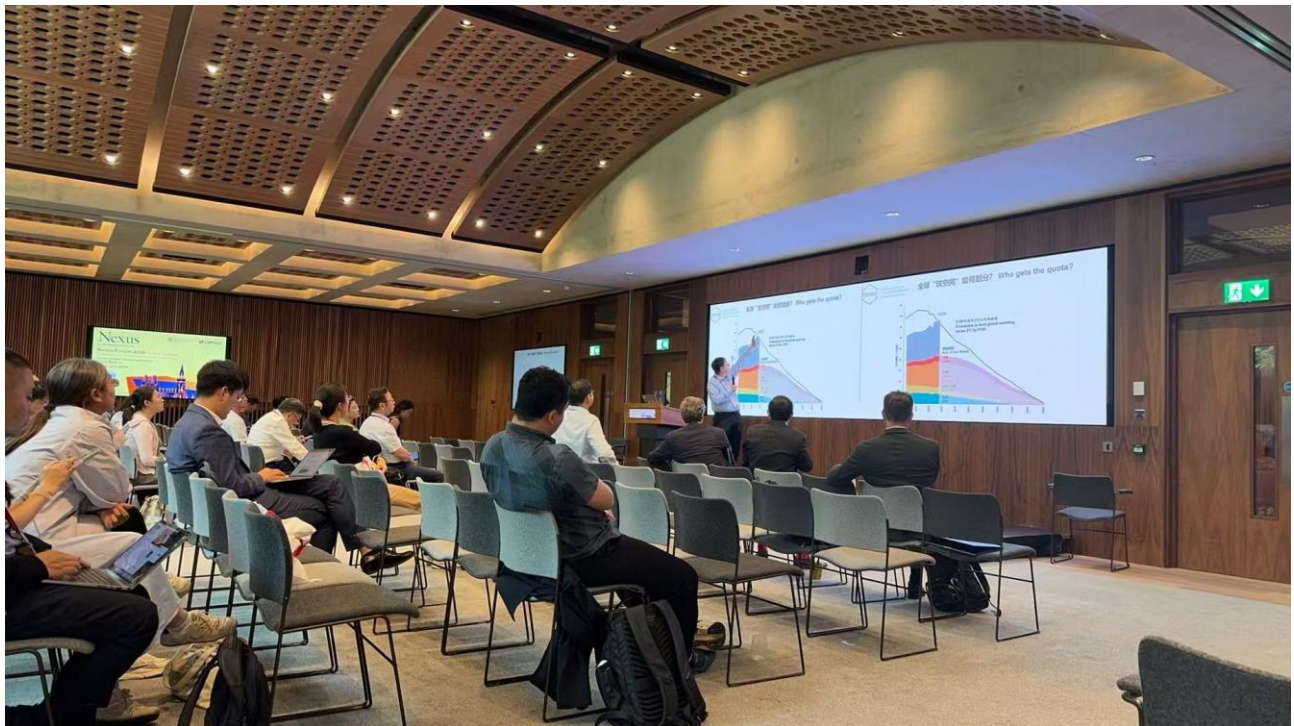
Professional development and future impact

In-person participation created opportunities for informal discussion before and after sessions that would have been difficult to reproduce online. I was able to exchange perspectives with researchers working across energy, environmental science, artificial intelligence and sustainable urban development. These conversations helped me compare methodological choices, understand emerging research priorities and consider how future collaborations could connect energy-system modelling with broader sustainability questions.

The experience will contribute to my research in three practical ways. First, it has sharpened how I explain the relationship between detailed technical modelling and decisions concerning decarbonisation. Second, it has reinforced the need for reproducible and interpretable data methods when communicating evidence to technical and policy stakeholders. Third, serving as Session Chair has strengthened my academic-service and leadership experience, which I will carry into future conference, teaching and research-team responsibilities.

Contribution of the IET Travel Award

The IET National Travel Award enabled me to take an active role in an international and interdisciplinary forum at an important point in my professional development. Its value extended beyond the cost of travel: it created an opportunity to present my research, contribute to the research community, develop as a session chair and connect my doctoral expertise with new technical and professional perspectives. I am grateful to the Institution of Engineering and Technology for supporting my participation in Nexus Forum 2026 and for investing in the development of early-career researchers.





Outbound Return

Manchester Piccadilly → Oxford

Thu, 23 Jul | 2h 49m, direct

SplitTickets Details

- Saved **£140.80** with SplitTickets. 🙌
- No need for extra changes between trains! Just stay on the train and show tickets for the next part of your journey.
- Show different tickets during your journey.

[View outbound eTicket\(s\)](#)

How to use E-ticket(s) ⓘ

Journey Info [Share](#)

- **09:25 Manchester Piccadilly** ⓘ
On time **Plat. 4**
Coach Any, Seat Any
📄 79 +4 >
[View stops](#) ▾
- **12:14 Oxford** ⓘ
Delayed **Plat. 3**

