Our vision for UK Metamaterials

The Metamaterials NetworkPlus will drive the development of a well-funded, self-sustaining and world-class metamaterials-enabled UK ecosystem, benefiting the nation's science superpower status and contributing to our nation's security.

Metamaterials science and technology will transform our economy in a digital age, helping to address society's challenges; across sustainability, advancing health care, communications, providing defence and security capabilities, enhancing computation techniques and benefiting the space and aviation industries. These metamaterial-enabled technologies will create new global market opportunities and competitive advantage for the UK both on a commercial and security standpoint and unlocking innovation by integrating them into complex systems.

Significant efforts and government support are being injected to accelerate metamaterial technologies by our competitors and adversaries, and the UK simply cannot afford to take a back-seat – we need to be part of the value-generation and security advancement from the beginning, by setting the standards and innovating generation-after-next devices.

As the scientific and technological voice of the metamaterials community, the UK Metamaterials NetworkPlus will lead the national conversation on metamaterials, working resolutely to advocate, translate and fully exploit the novel innovations emerging from our academic laboratories, securing international investment, and building our manufacturing infrastructure and skills pipeline, driving through generation-after-next technology and high-value and products. The NetworkPlus will lay the foundations of a national metamaterials programme. The UK's global offer will be a metamaterials environment open to ideas, private investment, talent and trade. It will be underpinned by public investment, industry buy-in, supportive infrastructure, enabling regulation and standards, and a culture of responsible and trustworthy innovation.

To achieve these objectives, we will:

1. Provide a coherent single point of access to the community. We will work to bring together the current and the next generation of academic, start-up and industry leaders working in the UK, and governmental agencies opening the field beyond its traditional boundaries.
2. Promote UK metamaterials related R&D, both nationally and internationally, providing a reliable metamaterials nexus for information, experts and the promotion of cutting-edge science and technology to policy makers and investors.
3. Support new and strategically important R&D. By distributing pump-prime funds we will support pilot/explorative projects that can be developed into competitive full-scale proposals to initiate research areas that are new to UK or strategically important; enabling the development of large-scale bids to build a sustainable metamaterials ecosystem.
4. Facilitate the development of metamaterials infrastructure. We will support the development of close links between government, academics, and industry, helping to

advocate for investment to enable the scale-up of metamaterials, producing key demonstrators and evidence to advance the metamaterials infrastructure.

5. Offer innovative approaches to encourage a healthy pipeline of talent and skills within the community. We will support the growth of talent in the UK, advocating for and planning to enhance retainment rates, attracting people into the field to match demand from academia and industry; and developing training to deliver scientific, technical, and entrepreneurial skills.
6. Develop standards and regulations for metamaterials. We will work across government and with relevant regulatory and expert bodies to ensure that the UK's regulatory landscape will help metamaterials products to reach the market. We will work with allies and partners to shape international norms and standards, including through multilateral forums.
7. Drive adoption in the wider economy. We will establish the connections required for manufacturing challenges, road mapping the path to scale up. We will foster a cohort of investors and stakeholders who are well-informed about metamaterials' potential, and a pipeline of firms who understand potential customers' priorities. We will hold showcases of the most exciting metamaterials firms, raising metamaterials as a priority for investment by government and industry.