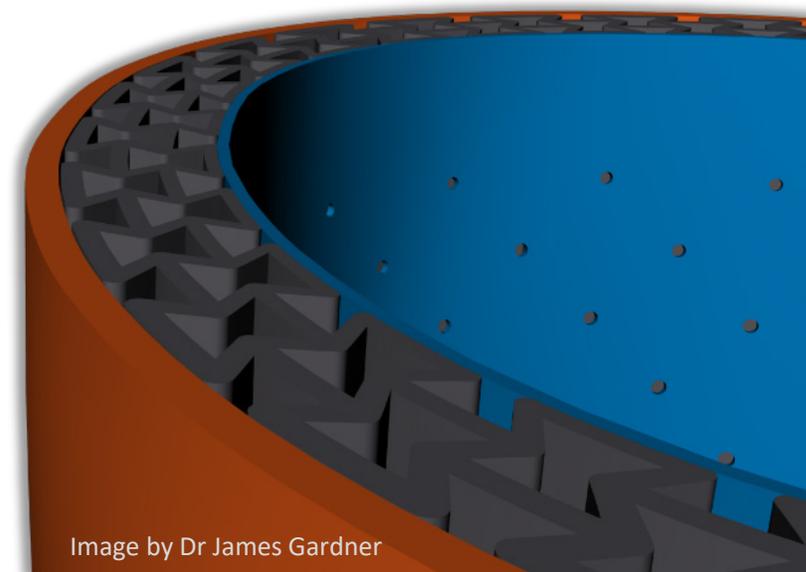
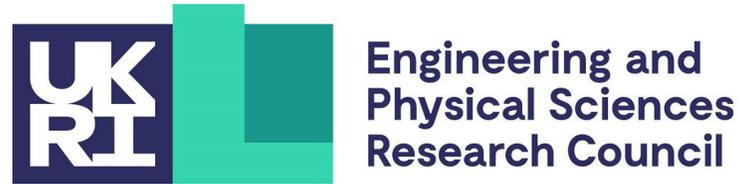


Metamaterials for Health

Dr Tom Allen FIMechE





Aim

- build a vibrant and creative, multidisciplinary community to accelerate novel and innovative metamaterials research and exploitation pathways, while securing and building the UK's sovereign capability and prosperity in this crucial scientific area.

|  <h2 style="margin-left: 100px;">Funding Streams</h2> | | | | |
|--|--|---|---|---|
| | Access Fund Funding Stream 1 | Discretionary Fund Funding Stream 2 | Small Grants Funding Stream 3 | Pump Prime Fund Funding Stream 4 |
| Purpose | To enable attendance at NetworkPlus activities where financial barriers would otherwise limit member engagement. | To support strategic activities beyond those originally conceived to the benefit of the NetworkPlus' vision and objectives. | For activities, including: <ul style="list-style-type: none"> • access to facilities • consumables • Travel • bid-writing | <ul style="list-style-type: none"> • Supporting growth, innovation and career advancement in metamaterials. • Enabling the development of new ideas, and original concepts to be tested. • Supporting the strategic priorities of the UKMMN+ |
| Frequency | Event Based | Monthly | Monthly | Biannual till March 2026 . |
| Value | Need dependent | <=£2,500 | <=£5,000 | <=£50,000 (80% of FEC) |
| Application cycle | Integrated into event registration | Members propose to Executive Board (EB) members who sponsor ideas at EB monthly meeting | Open form reviewed monthly | Applications open on 1st Monday of October and March <ul style="list-style-type: none"> - Expression of Interest - Full proposal after shortlisting |
| Review Process | Email application to info@metmaterials.network . The questions will be available via the governance documents or through the inbox. | <ol style="list-style-type: none"> 1. Executive Board via monthly review and vote | <ol style="list-style-type: none"> 1. Executive Board via monthly review and vote | <ol style="list-style-type: none"> 1. Assessment Panel review EOI and rank order submissions. 2. Executive Board confirm expected funding and work with applicants. 3. Assessment Panel review full submission and perform final rank ordering. 4. Executive Board confirm funding. |

2024 STFC Cross Cluster Proof of Concept Grant



The Call

- Opportunity to claim up to £45k (match-funded) to fund business-led, proof-of-concept projects from any area related to the STFC-supported Clusters in Space, Energy, Health and Life Sciences, Quantum, Digital, and Defence and Security.

Purpose

- Stimulate collaboration with organisations in the clusters at Harwell and Sci-Tech Daresbury Campuses and facilitate access to national facilities.
- Help progress innovative ideas and demonstrate feasibility of technology, services or concepts.



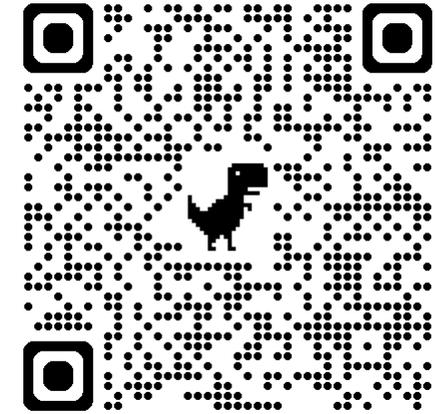
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since 2017



Over £3m invested, leveraging
additional £3.2m in match
funding



Over 261 organisations
supported



Scan the QR or click [here](#) to sign-up to the CCPOC 2024 information webinar

Launch Date 4th September 2024
Closing Date 16th October 2024

Email

CrossClusterPOC@stfc.ac.uk
to request an application pack

Metamaterial

- 3D structure comprised of at least two different materials, with a response or function that impossible to achieve with any individual constituent material.

Metasurface

- 2D version of a metamaterial where the structural elements are confined to a 2D plane.

Metamaterials for Health



HEALTHY LIVING



HEALTHCARE



EXERCISE



WELLBEING



AGEING



MONITORING &
DIAGNOSIS



THERAPEUTICS



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Health Lead(s)



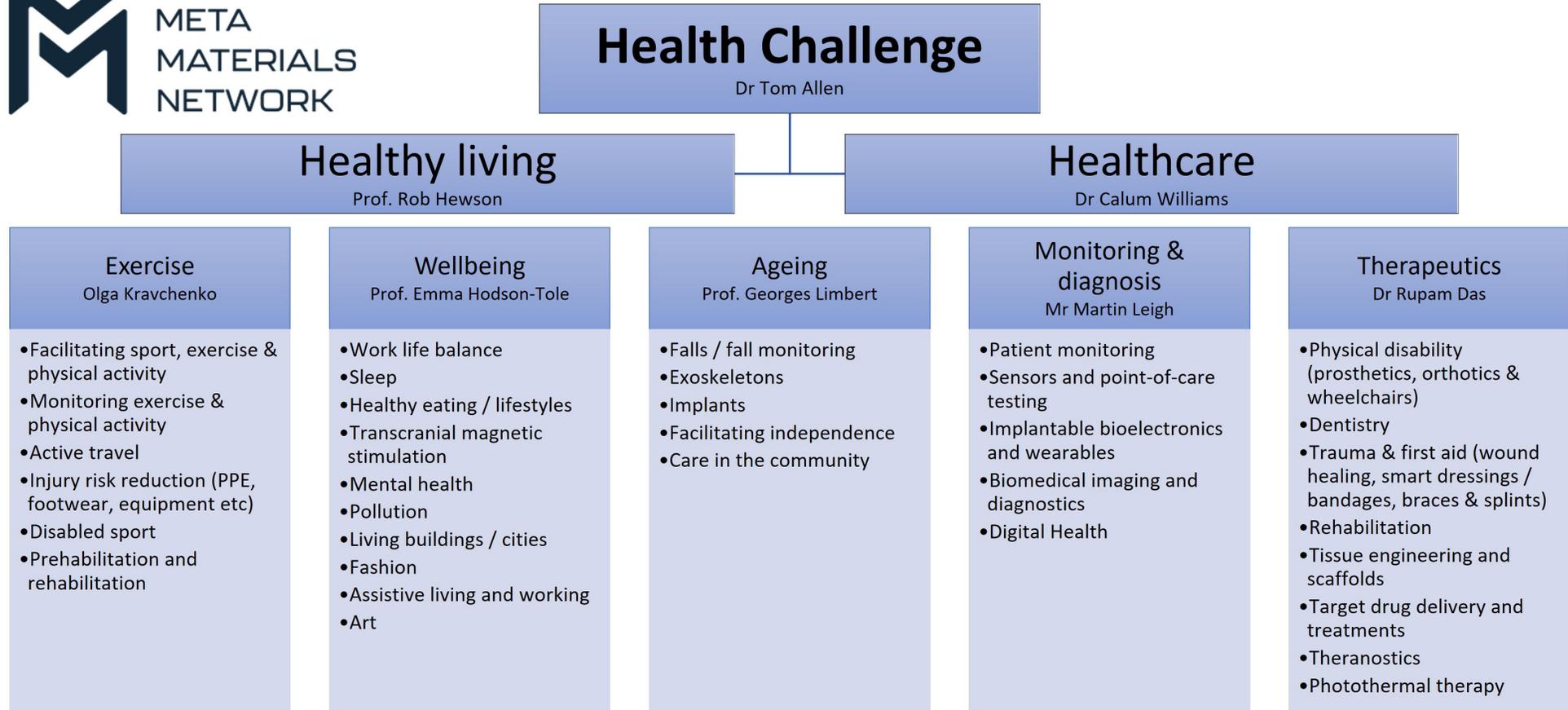
Tom Allen
Manchester Metropolitan University

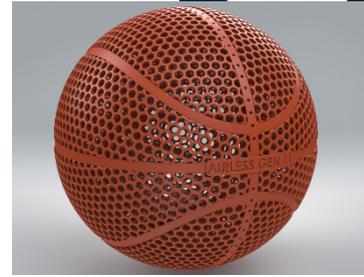
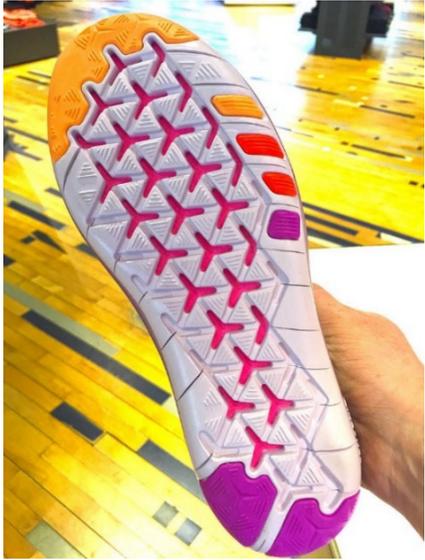


Rob Hewson
Imperial College London



Calum Williams
University of Exeter

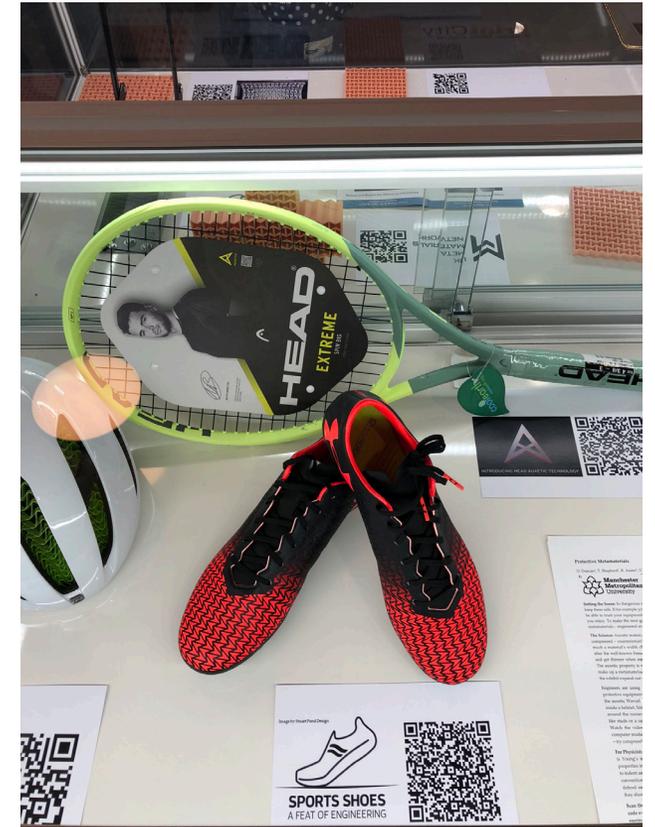




UK META MATERIALS

AUXETIC





Smart Materials and Structures

TOPICAL REVIEW • OPEN ACCESS

Mechanical metamaterials for sports helmets: structural mechanics, design optimisation, and performance

Daniel Haid¹, Leon Foster¹ , John Hart¹, Richard Greenwald^{2,3}, Tom Allen⁴ , Pooya Sareh^{7,5,6}  and Olly Duncan⁴ 

Published 19 October 2023 • © 2023 The Author(s). Published by IOP Publishing Ltd

[Smart Materials and Structures](#), [Volume 32](#), [Number 11](#)

Citation Daniel Haid *et al* 2023 *Smart Mater. Struct.* **32** 113001

DOI [10.1088/1361-665X/acfdff](https://doi.org/10.1088/1361-665X/acfdff)

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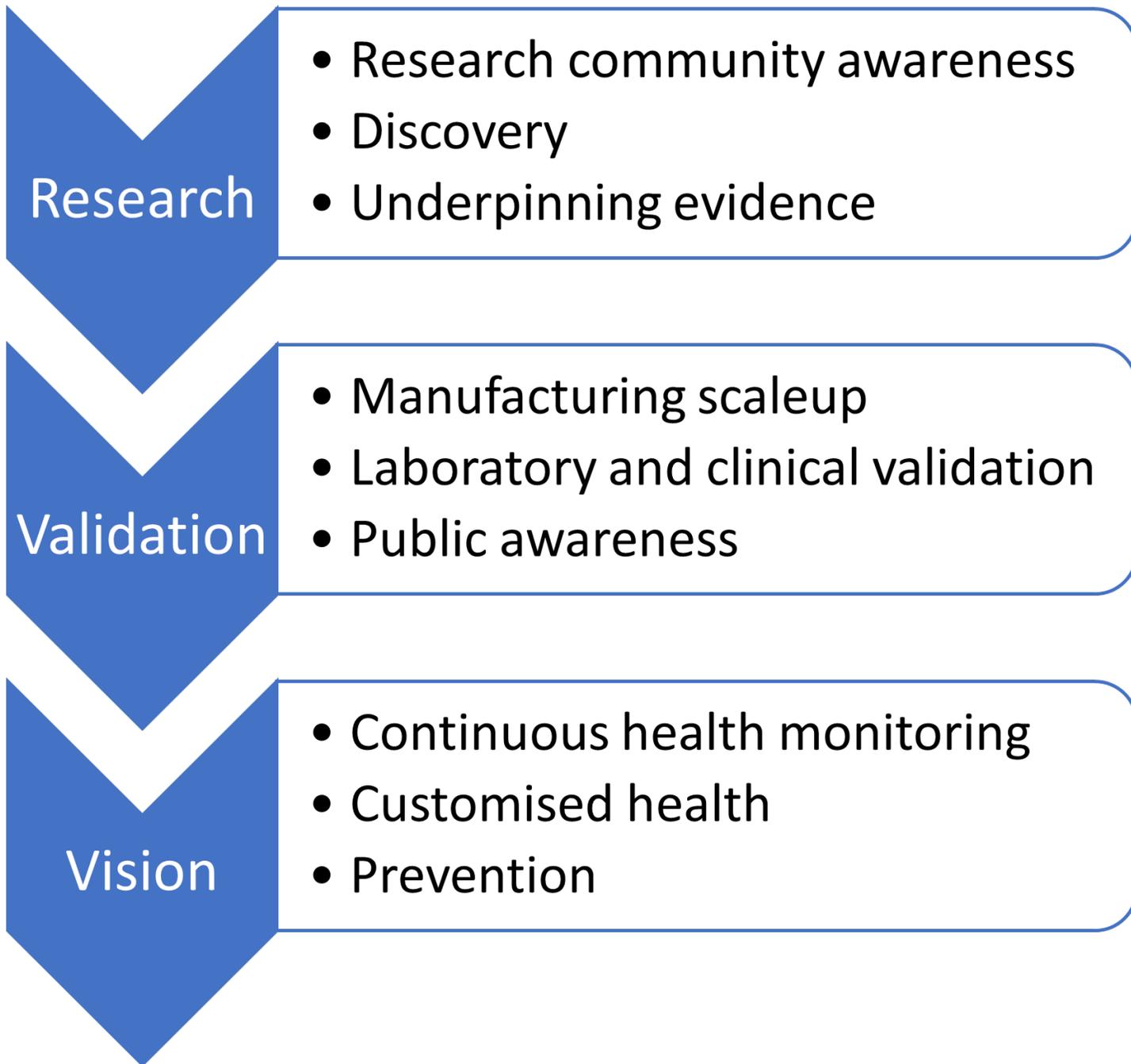


Improving the world through engineering



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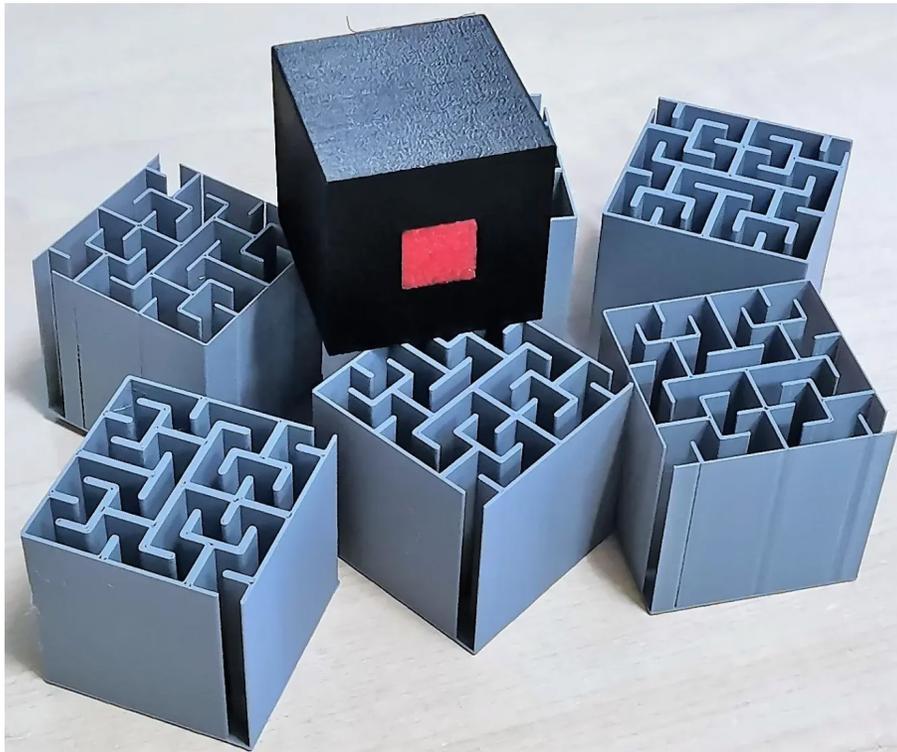


Image credit: Gianni Comandini



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June 2024

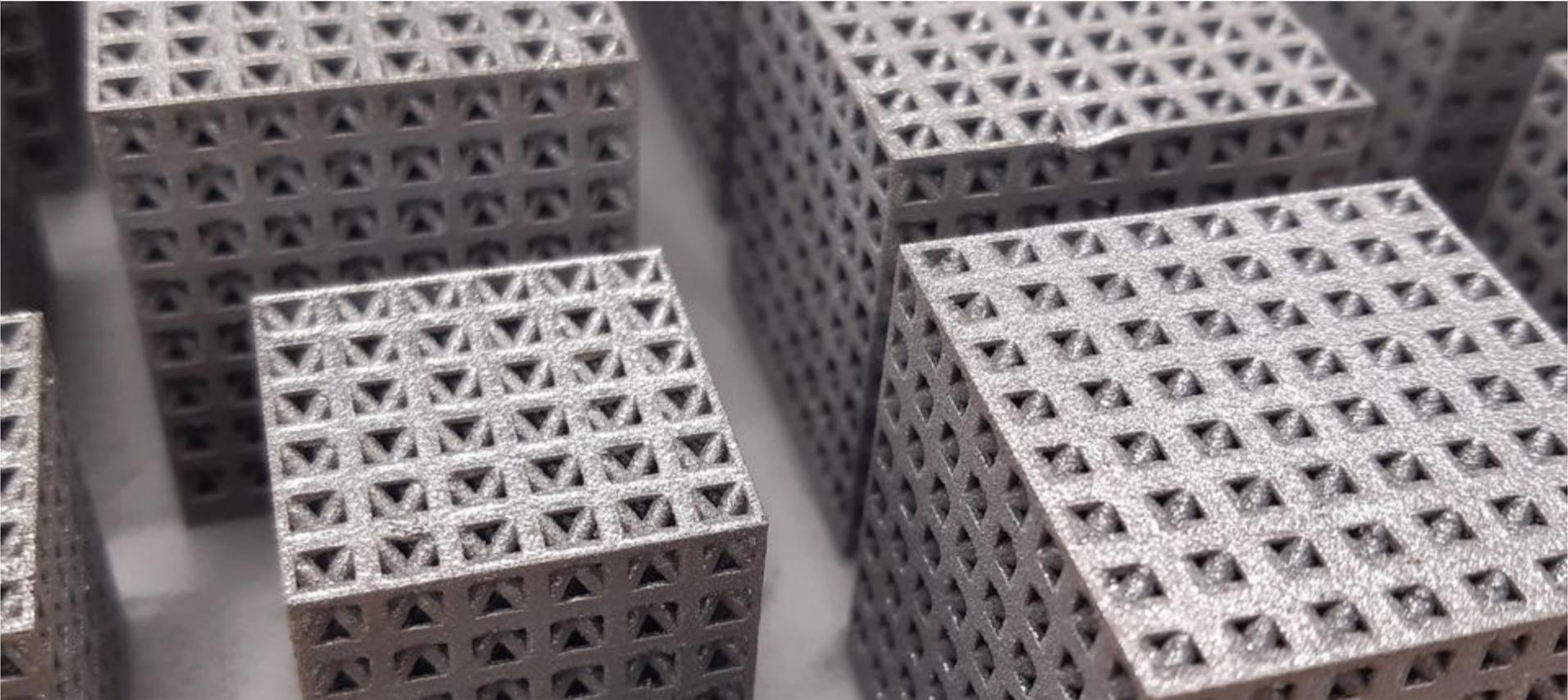
Sheffield Hallam, National Centre of
Excellence for Food Engineering (NCEFE)



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Conference session on metamaterials in sports





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Topical Collection: Metamaterials in Sport

CALL FOR PAPERS | Submission deadline: 1 March 2025

Guest Editors: Oliver Duncan, Enrique Cuan-Urquizo, Gregory Chaplain, David Newman & Olga Kravchenko

Metamaterials research spans various domains, and in this collection, we hope to promote the application of more metamaterials in sports.

**Thank you
for listening**



Thank you for listening.