

Advance your career in science

with professional recognition that showcases
your **experience, expertise and dedication**

Stand out from the crowd

Prove your commitment
to attaining excellence in
your field

Gain the recognition you deserve

Achieve a professional
qualification that inspires
confidence and trust

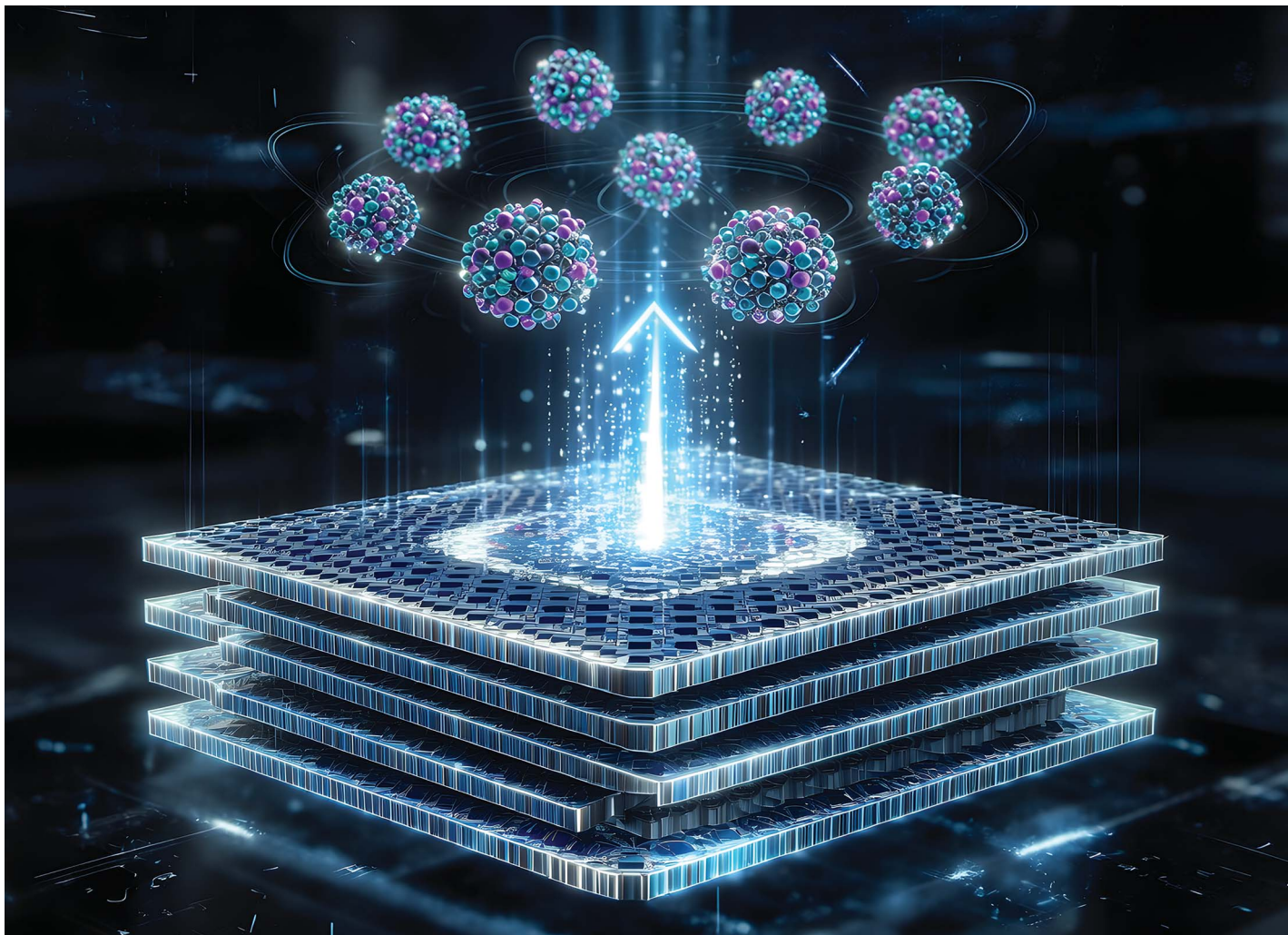
Unlock your career potential

Apply for our professional
registers (RSci, RSciTech)
or chartered status
(CChem, CSci, CEnv)

Apply now

rsc.li/professional-development





Showcasing research from Dr. Lakshi Saikia's laboratory, Coal, Energy and Materials Sciences Division, CSIR-North East Institute of Science and Technology, Jorhat, India.

MXene quantum dots in catalysis and energy conversion: structure-activity insights and emerging prospects

This work focuses on MXene quantum dots (MQDs) and their role in energy conversion and storage. It explains how quantum confinement, surface chemistry, and heteroatom doping influence their catalytic and electrochemical performance. MQDs offer abundant active sites, fast charge transport, and tunable electronic properties, enabling efficient electrocatalysis (HER, OER, NRR) and improved energy storage. The study also highlights the importance of material design and structure-activity relationships, along with challenges such as stability, active-site identification, and scalable synthesis for practical applications.

Image reproduced by permission of Dr Lakshi Saikia from *Nanoscale Adv.*, 2026, **8**, 3102.

Image created using BRIA AI.

As featured in:



See Lakshi Saikia *et al.*,
Nanoscale Adv., 2026, **8**, 3102.