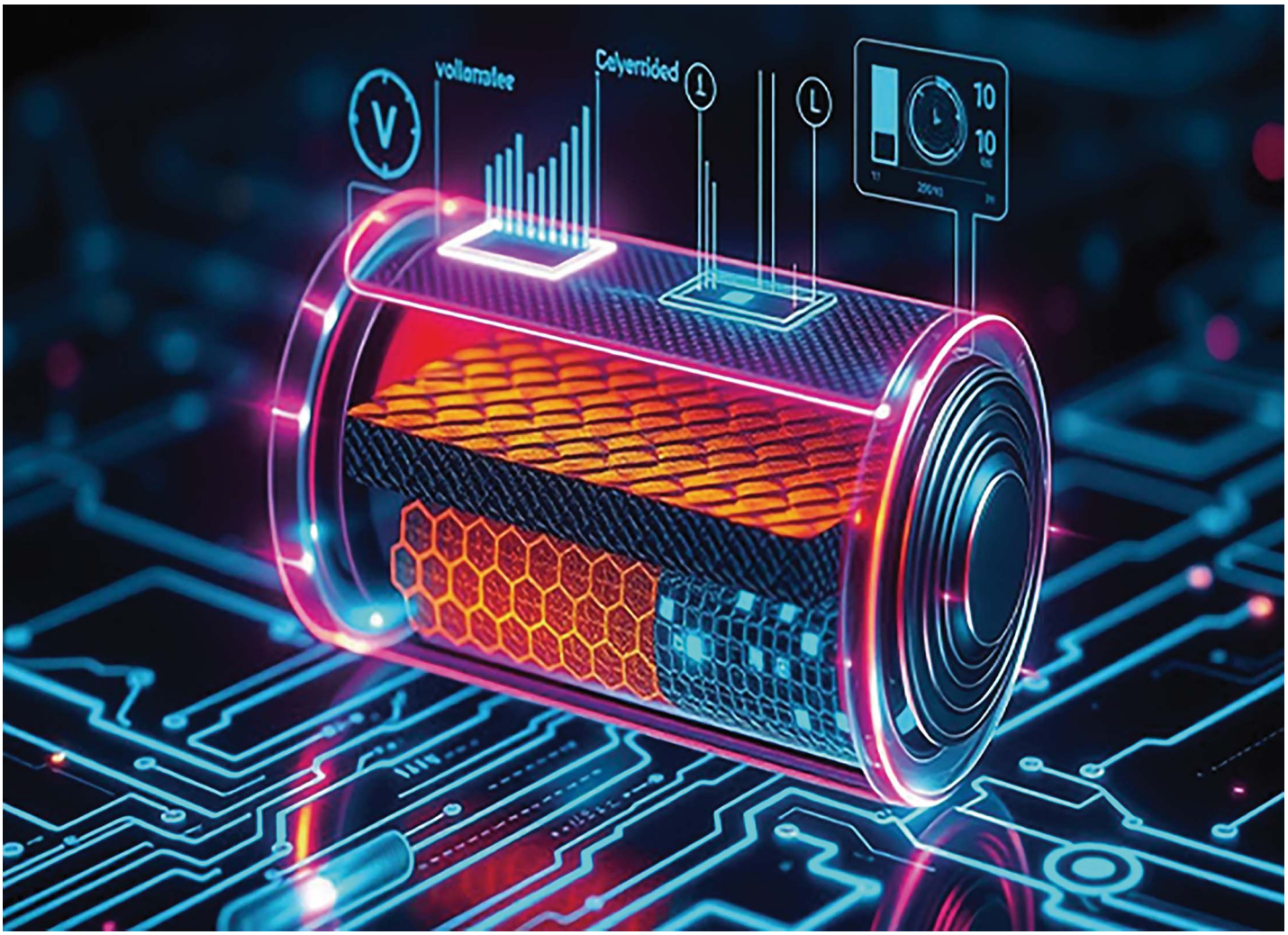

Showcasing research from Professor Runwei Mo's laboratory, School of Mechanical and Power Engineering, East China University of Science and Technology, Shanghai, China.

Recent status, key strategies and challenging perspectives of smart batteries for next-generation batteries

The development of smart batteries is an effective strategy to improve battery life and operational safety by integrating smart concepts into battery design, manufacturing and management. Based on different perspectives of battery design, manufacturing and management, smart batteries can be divided into three parts: smart materials, smart manufacturing and intelligent sensing. The mechanism of action and application principles of each part are also discussed for in-depth understanding. We have analysed the challenges and issues facing the development of smart batteries to facilitate their practical development. Image reproduced by permission of Runwei Mo from *J Mater. Chem. A*, 2025, **13**, 21116.

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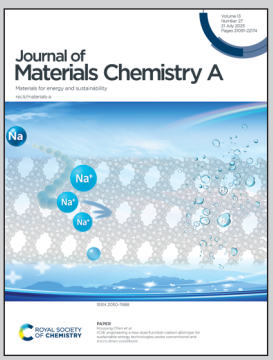

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