



Introduction to advanced electronic chemicals

Cite this: *Ind. Chem. Mater.*, 2025, 3, 507 Ruixia Liu, ^a Rong Sun ^{*b} and Guoqiang Yang ^{*c}

DOI: 10.1039/d5im90014j

rsc.li/icm

With the rapid development of global science and technology, the electronics industry has become an important force to promote the development of modern

society. From semiconductor chips to high-performance display panels, from 5G communication to artificial intelligence, every breakthrough in the electronics industry is inseparable from the support of high-quality electronic chemicals. As special chemicals and supporting materials for the electronic information industry, the performance and quality of electronic chemicals directly affect the performance, reliability and production efficiency of electronic products. As the electronics industry moves toward high-end, intelligent and miniaturized

development, the requirements for the precise design and synthesis of key materials for electronic chemicals, trace impurity control, functionality and stability have become increasingly stringent, which are also the key technical bottlenecks in the industry and have become focal points of global scientific research and industrial competition.

This special issue focuses on the design and preparation technology of key materials for electronic chemicals, featuring 12 research papers and review articles authored by R&D teams with

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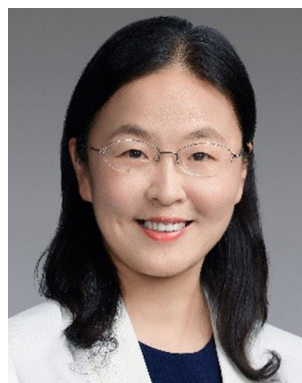
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Rong Sun currently serves as the Director of the Institute of Advanced Materials Science and Engineering at Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, and the Dean of Shenzhen Institute of Advanced Electronic Materials. She is a member of the Expert Committee for Shenzhen's 15th Five-Year Plan, a Senior Member of IEEE, a Clarivate Analytics Global Highly Cited Researcher (2022–2024), and is repeatedly ranked among Stanford University's Top 2% World's Top Scientists. She pioneered the establishment of the highly organized R&D team focusing on core technologies of key materials for advanced IC packaging. Under her leadership, the full-closed-loop R&D platform for advanced IC packaging materials has been commissioned covering from physical & chemical tests, analytical tests, and pilot tests to application tests.

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rich research experience in related fields. It highlights representative research progress in the design, preparation, separation and purification of typical electronic chemicals such as photoresists, packaging materials, electronic special gases, and ultra-high-purity wet electronic chemicals. By compiling a series of high-quality research papers, this issue brings

together the latest research achievements in the field, providing a platform for researchers to showcase and exchange ideas. It facilitates in-depth discussions on fundamental theories and cutting-edge technologies, promotes the innovation and development of electronic chemicals, and provides important theoretical support and technical guidance for their industrial applications.

Here, we would like to express our sincere gratitude to all the authors, reviewers and editorial team of *Industrial Chemistry & Materials*, as well as to the annual meeting of the China Association for Science and Technology, the Chemical and Engineering Society of China and Sinopec Nanjing Chemical Industry Co., Ltd. for their strong support.



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