



Catalysts

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Special Issue Reprint

Feature Review Papers in Electrocatalysis

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Electrocatalysis is central to many technologies shaping a sustainable energy future. By enabling efficient conversion between chemical and electrical energy under mild conditions, electrocatalytic systems support hydrogen production, fuel cells, carbon dioxide utilization, environmental remediation, and electrochemical sensing. Advancing catalyst design remains essential to overcome kinetic limitations, reduce energy losses, enhance durability, and ensure scalability for practical applications.

The Reprint “Feature Review Papers in Electrocatalysis” brings together nine reviews that reflect the scope and progress of this rapidly evolving field. The contributions examine fundamental mechanisms, structure–activity relationships, and the rational design of active sites at atomic and molecular levels. They also address advanced materials architectures, theoretical descriptors, operando characterization methods, and device-level considerations. By integrating fundamental insights with applied perspectives, this collection highlights current achievements while outlining key challenges and emerging directions, providing a valuable reference for researchers working toward more efficient and sustainable energy conversion and storage technologies.

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