Electrode Modifications for Redox Flow Batteries

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The catalytic effects for different types of functional groups were identified effectively.

O-C=O groups improve the cells performance while the C-O and C=O groups degrade it.

This highlights a new preferred pathway to functionalize carbon materials used in VRB cells in the future.

Metal-organic frameworks (MOFs) have been considered as advanced catalysts because of their extraordinary surface area, tunable pore geometries, and unlimited chemical composition.

Chemically stable nanoporous MOFs in electrolytes as catalysts were found and in-situ grown on graphite electrode, effectively enhancing the electrode properties by accelerating the I$_3^-$/$I^-$ redox reaction.

This highlights a way for MOFs to be used in the field of RFBs.

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