Organic Redox Flow Batteries

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- Organic redox materials tested in redox flow batteries
  - Nonaqueous electrolytes
  - Aqueous electrolytes
- Key factors to consider: Solubility, redox potential, stability, cost, compatible electrolyte

![Chemical Structures]

- 9-Fluorenone
- Methylphthalimide
- Methyl-Viologen (MV)
- Dialkoxyanthraquinone
- RS8
- Fc-TFSI
- R-TEMPO
Our accomplishments:

- Nonaqueous Li/organic: high voltage and energy density
- Nonaqueous organic/organic: high current, good cyclability, performance degradation mechanism
- Aqueous organic/organic: stable materials, good cyclability