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Presentation title: From synthesis to environmental applications of perovskites materials.

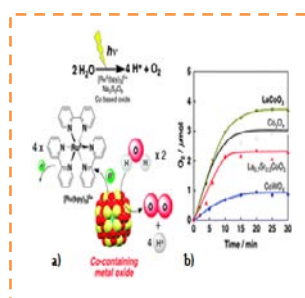
Abstract : Owing to their high thermal stability, excellent oxidation activity, and low price; perovskites have been explored for a variety of environment-related and energy-related applications, including automobile exhaust purification, fuel cells, N₂O decomposition, and water–gas shift reactions. In recent years, efforts have also been made to study the properties of perovskites in terms of reactions such as chemical looping combustion (CLC) and photocatalytic water splitting.

These isomorphous solids (general formula: ABO₃) are highly versatile due to the flexibility in the chemical composition of perovskites with a large number of cations that can fit into both the A and B positions within the same crystalline structure (i.e., practically all the metals are stable in the perovskite lattice). Another key feature is the availability of multi-component perovskites, which can be synthesized by partial substitution of cations at either A or B sites.

graphical abstract :

Synthesis of perovskites by:

- Co-precipitation method
- Citrate sol–gel method
- Solution combustion synthesis (SCS).



Characterization by:

- XRD
- Sbet
- TGA-TDA
- FT-IR
- UV-VIS
- PSD
- XPS...

Application

