

Recycling catalysts

Slide by Neil Goalby. Available from rsc.li/3FdoTmM

A new process has been developed to electrochemically recycle some catalysts that are in the same phase as the reaction they catalyse (known as homogeneous).

These same phase catalysts can be fully mixed into the reaction which allows for easy catalysis. However, the ease of mixing means the catalyst is hard to separate.

The usual recovery process for homogeneous catalysts is distillation, which is energy intensive. The new process uses an electrochemical cell and applies a moderate voltage to collect the catalyst on the anode. Reversing the voltage desorbs the catalysts from the anode, allowing it to be reused.



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More effective catalyst recovery means more catalysts are available for industry

Questions

1. What is a catalyst?
2. Suggest why using homogenous catalysts industrially can be difficult.
3. Explain why the process only works on negatively charged catalysts.