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The Invention

UW-Madison researchers, working in collaboration with researchers from Cornell, developed metal-oxide based liquid crystal (LC) sensors for monitoring catalytic reactions. The inventors used a previously developed computational material screening method to identify suitable material pairs. Specifically, the inventors identified metals/ metal-oxides and LCs for a particular reaction. With this, the inventors were able to successfully monitor the progress of a hydrogenation reaction over a range of temperatures leading to observable changes over time in the LC orientation (e.g., planar to homeotropic). These changes could be used to estimate the kinetic parameters of the reaction and could ultimately be used to screen for desirable catalysts and reaction conditions.

Additional Information

For More Information About the Inventors

- [Emmanouil Mavrikakis](#)

Tech Fields

- [Analytical Instrumentation, Methods & Materials : Sensors](#)

For current licensing status, please contact Jennifer Gottwald at jennifer@warf.org or 608-960-9854