NEXSURF

Catalyst technologies for CO_2 capture & conversion

Turning captured carbon into fuels and chemicals with advanced materials and renewable electricity.

NEXSURF ehf. · Iceland · Pre-revenue R&D startup

NEXSURF
CATALYZING A NET-ZERO FUTURE

The bottleneck

CO_2 capture is scaling, but carbon utilization still struggles to turn captured CO_2 into valuable products efficiently.

High energy demand

Electrochemical CO_2 conversion often requires high input energy and careful catalyst control.

Selectivity challenge

Catalysts must guide CO_2 toward target fuels and chemicals rather than competing side reactions.

Stability barrier

Materials must remain active under real operating conditions before industry can adopt them.

Our solution

A catalyst platform for renewable-electricity-driven carbon utilization

NEXSURF develops advanced catalyst systems that help convert captured CO_2 into useful fuels and chemicals.

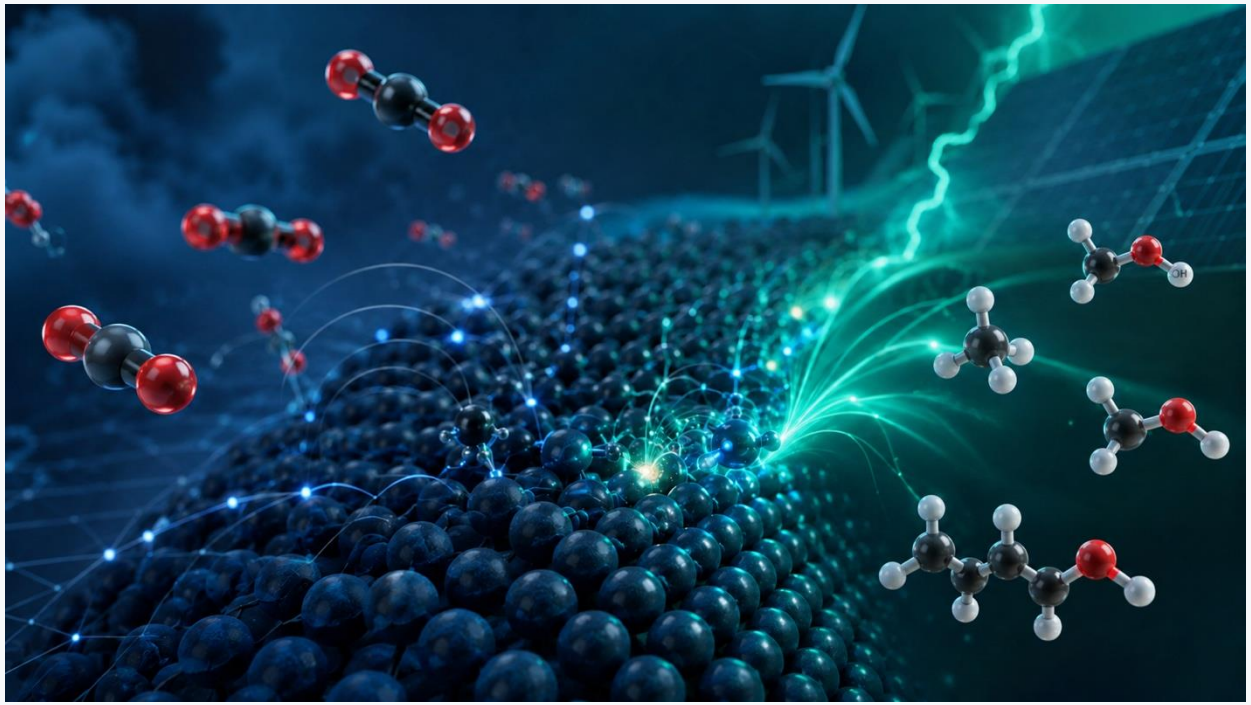
Capture | Activate | Convert | Validate

Platform focus

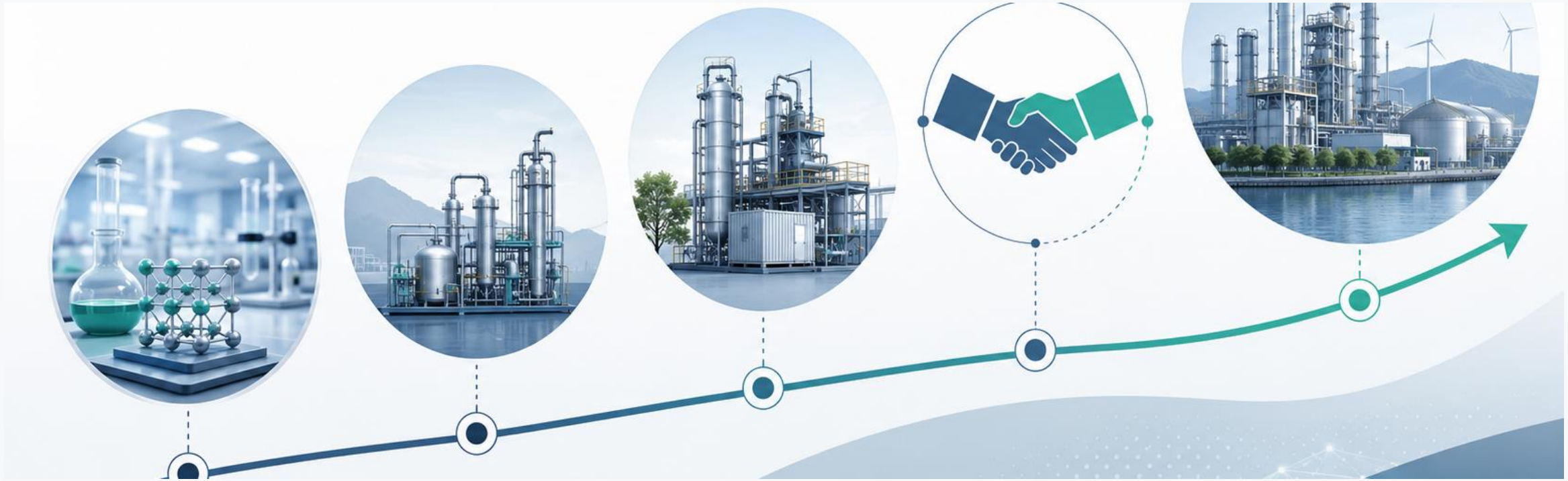
Transition-metal carbide / carbonitride / phosphide catalyst families that are designed for lower energy demand, higher selectivity, and improved operational stability.

Protection of Innovation

Three patent applications have been submitted as part of the strategy to secure intellectual property rights.



Roadmap to validation and commercialization



2026-2028
Early validation

- Core experimental validation, benchmarking and proof-of-concept system design
- IP protection through strategic patent filings
- Outreach to research and industrial partners

2028-2031
Application validation

- Demonstrate performance under application-relevant conditions – proof of concept
- Expand external testing and strengthen strategic development partnerships
- Outreach to deep tech investors

2032-2035
Pilot readiness

- Transition from laboratory validation toward pilot-scale readiness
- Secure funding and industrial support for pilot-scale activities

2035+
Commercial deployment

- Scale deployment through strategic pilot partnerships and licensing models
- Support industrial integration and joint development initiatives