xinterra

A New World of Materials

We're on a mission to fundamentally change the development of sustainable materials to meet the urgent challenges of the climate crisis.

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Current materials R&D process:

Slow, expensive, limited.

FORMULATIONS 2-5y

“GREEN” CHEMICALS 10y

TEFLON 25y

Introducing Xinterra Design Factory™ (XDF)

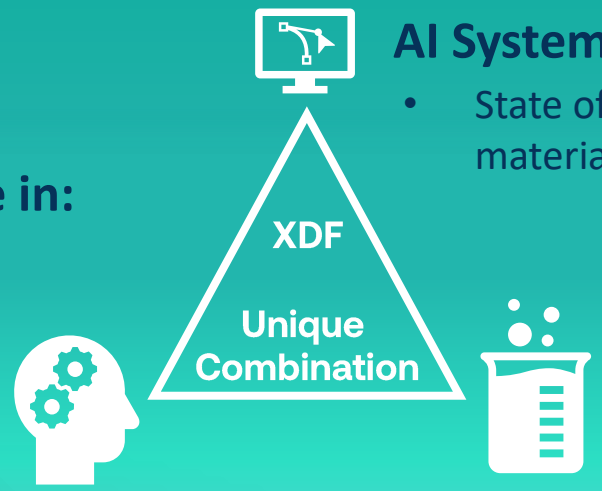
Radically accelerates the development and application of new materials

AI Systems

- State of the art, tailored for materials science

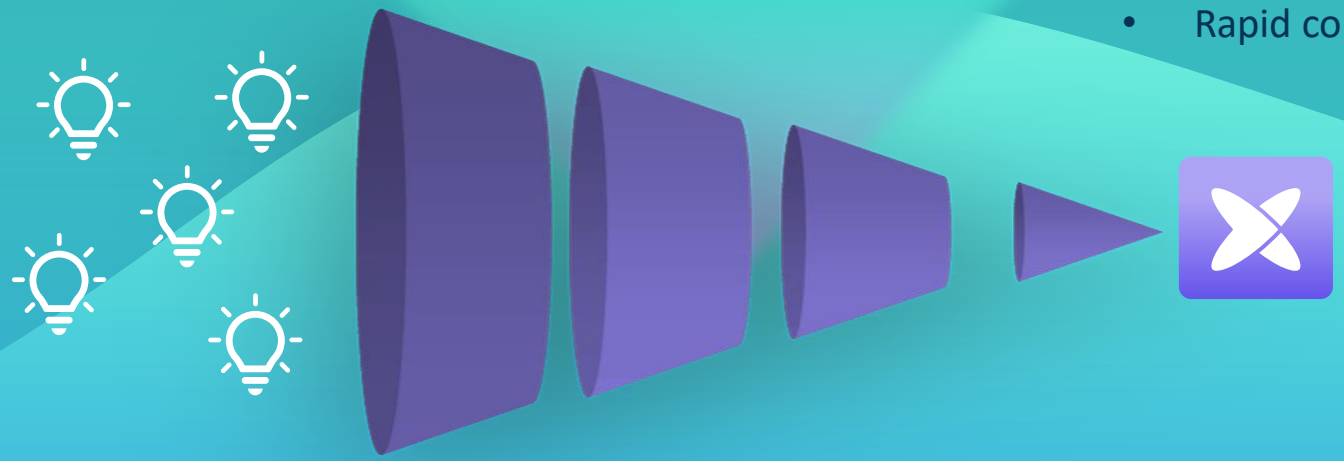
Deep Materials Science Expertise in:

- Photovoltaics
- Inorganic crystals & semiconductors
- Thermoelectrics
- Polymers & composites
- Batteries
- Porous materials
- Catalysts
- Nanoparticles



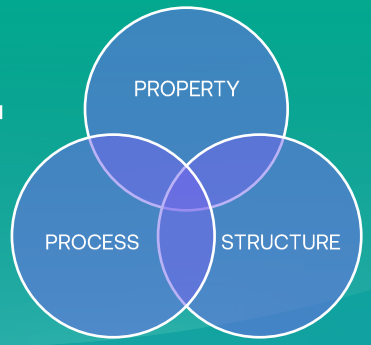
High Throughput Experimentation Tools

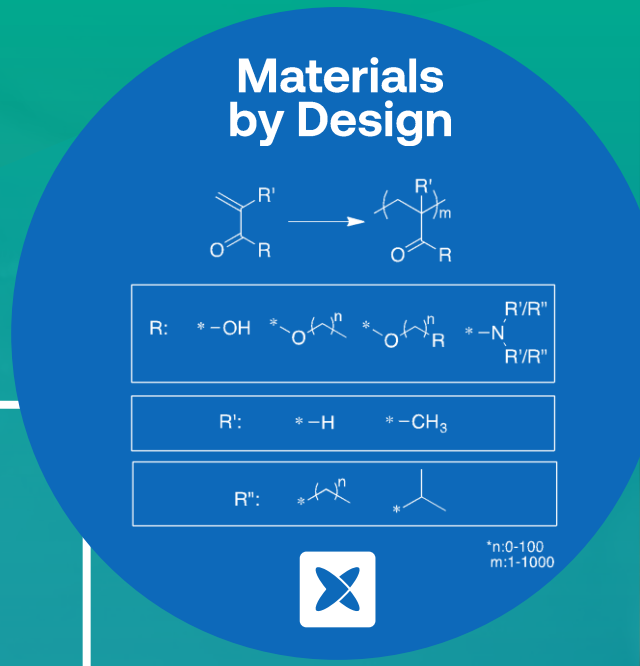
- Modular & inter-operable
- Rapid collection of data



NOT THEORY. NOT SIMULATION. REAL MATERIALS.

Understanding **XDF**





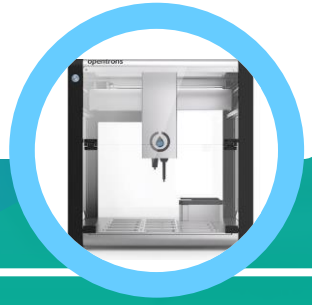
Opportunity

Customer's problem statement

Experimental data shared by customer

Customizable HTE

Experimental Data Generation → Properties Measurement



Data Curation

Data cleaning + augmentation → Materials Descriptor framework

Turn data into machine compatible input.

Data Analytics, AI/ML

Useful Insights for Decision Making → Design of new experiments or materials

Algorithm predicts materials based on user inputs and desired properties.

Industry Case Study: **Industrial Coating Formulations**

Customer challenge

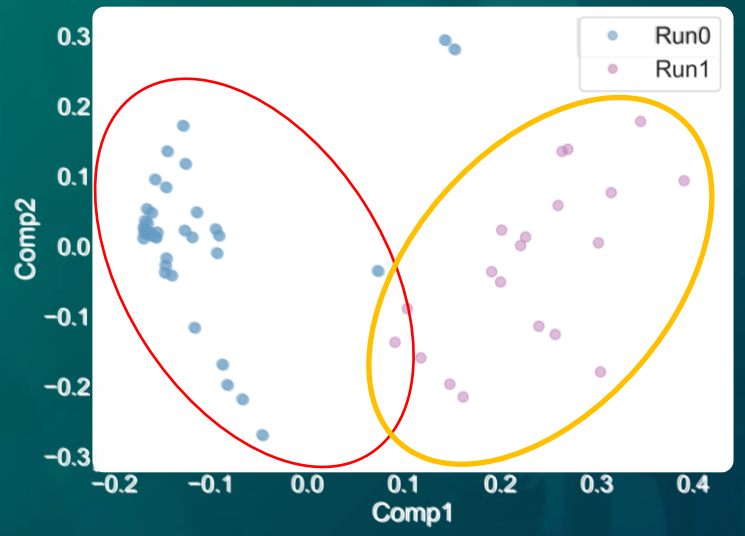
Seven months and 69 formulations failed to achieve desired performance

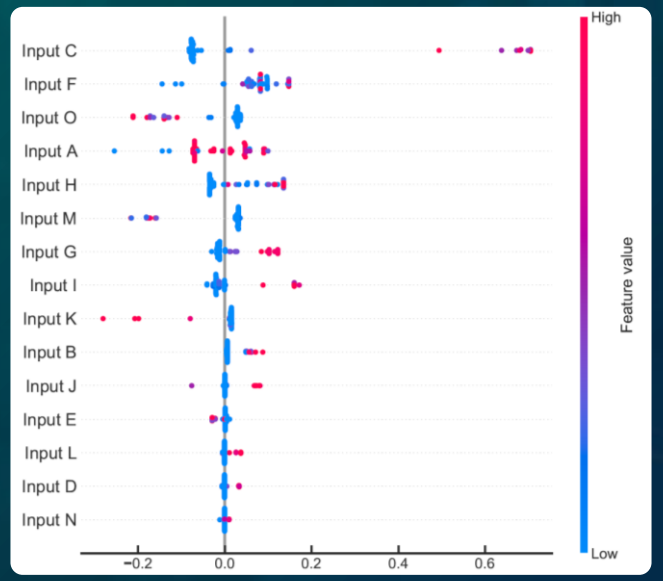
Xinterra's solution

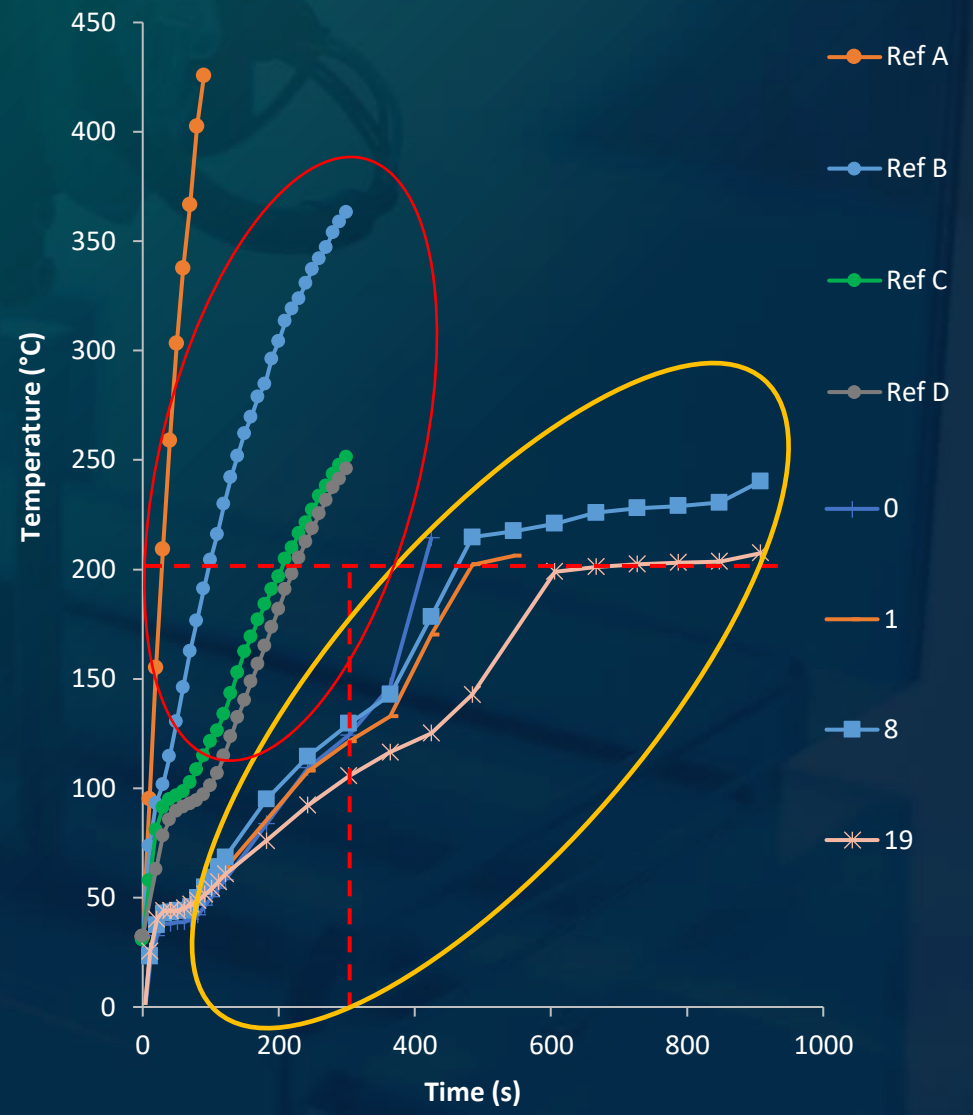
AI-enabled DoE and sampling strategy using XDF models

Result

Desired performance achieved in less than one month







Industry Case Study: **Cost Reduction in Chemicals**

Customer challenge

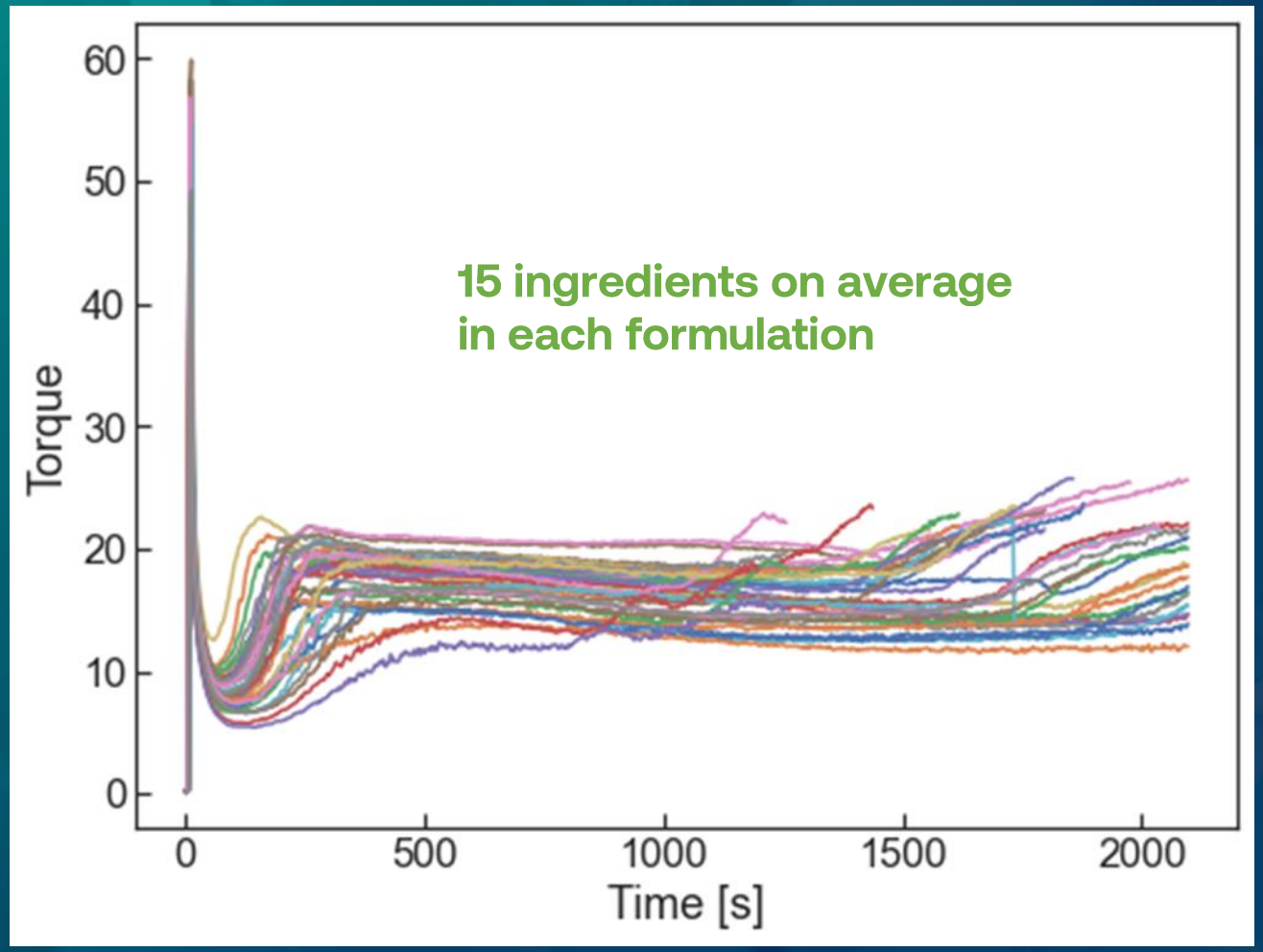
5% cost reduction, maintaining rheology properties

Xinterra's solution

AI-enabled DoE and sampling strategy using XDF models

Result

>20% cost reduction in less than one month



Business Model

As-a-Service

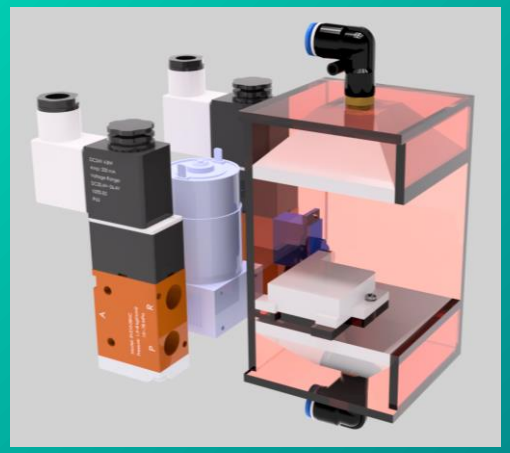
- **Project specific**
- **Tailored AI models to provide autonomy**

Materials IP Licensing

Pricing mechanisms:
Royalties, equity, JVs to manufacture and commercialize

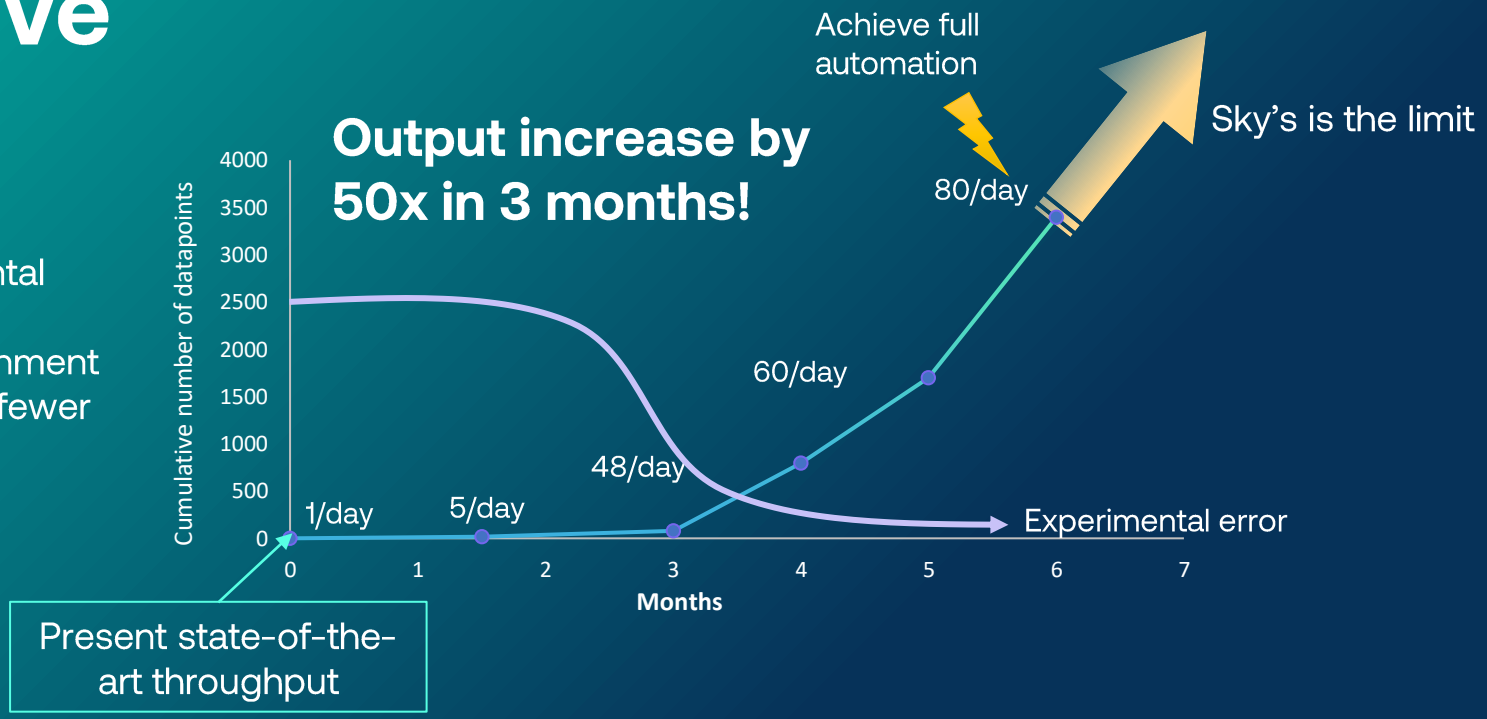
Starting by Materials for CO2 Capture

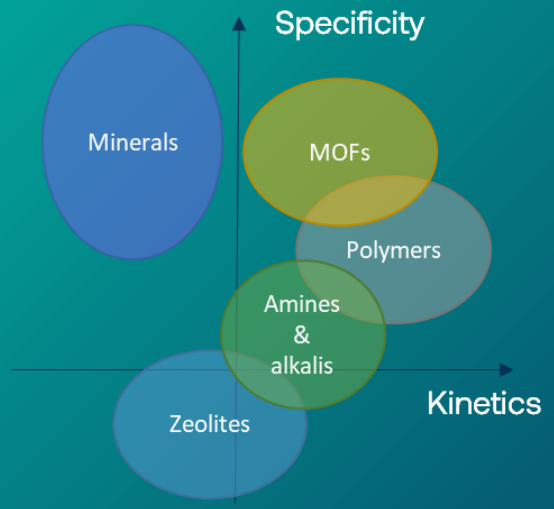
CO_2 Capture Initiative



High throughput environmental chambers

- Precise control of environment
- Paired with AI to require fewer datapoints



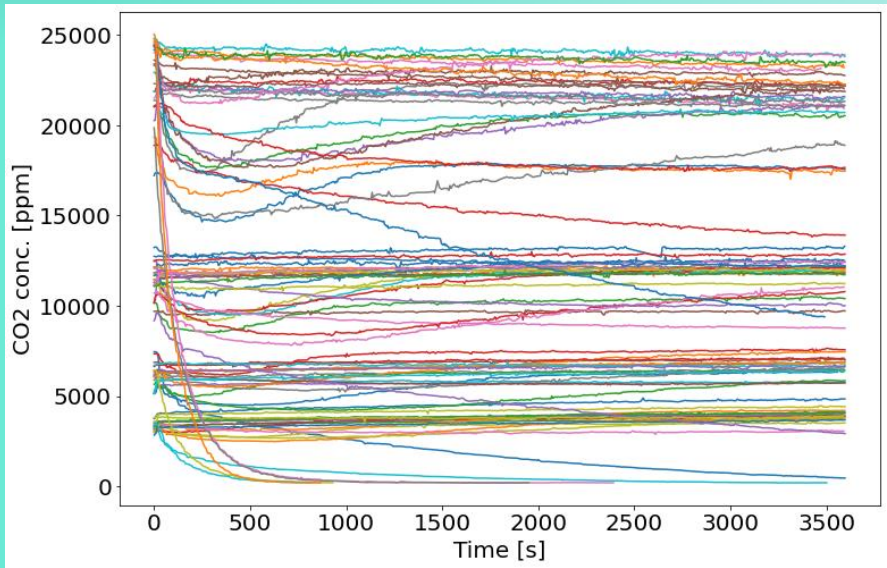


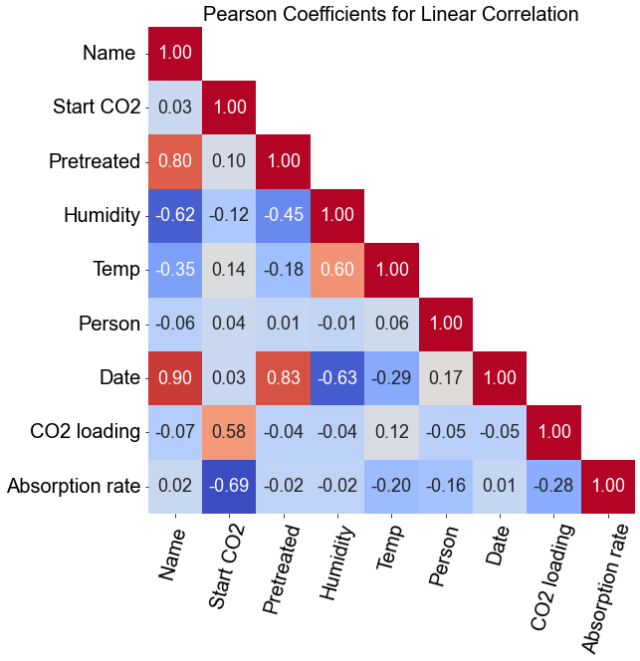
AI Guided Formulations

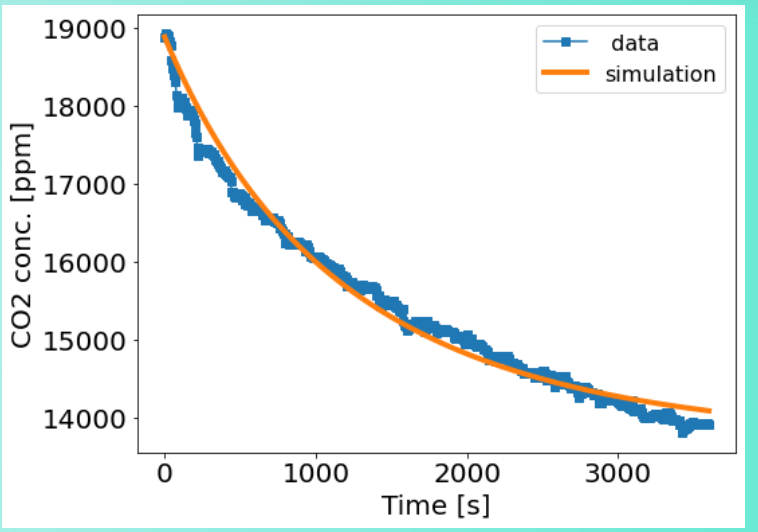
Customer driven

- Novel combinations
  - Eg: Polymers+minerals
- Application oriented
  - Eg: Paints, textiles
- "Forced" serendipity

A giant leap forward in Carbon Capture innovation







Our data

- High fidelity kinetic plots
- Multi-modal response
- Materials dependent performance

Data driven insights

- Derive correlations
- Drive DoE & materials design

Empirical modelling

- Our models capture the experimental characteristics
- Ability to simulate performance to find the best materials

RESULTS:

Carbon capture materials database - **real** world, reproducible data. Not theoretical performance

Our Team

Operating Team

Patrick Teyssonneyre
CEO

Jatin Kumar
Technical Lead

Daniil Bash
Automation Lead

Zekun Ren
AI Lead

Scientific Advisors

Tonio Buonassisi
Prof. MIT MechE

Kedar Hippalgaonkar
Prof. NTU MatSci

Liu Zhe
Prof. NPU

How will we create **impact?**

ENVIRONMENTALLY SUSTAINABLE PLANET

7 AFFORDABLE AND CLEAN ENERGY	9 INDUSTRY, INNOVATION AND INFRASTRUCTURE		12 RESPONSIBLE CONSUMPTION AND PRODUCTION	13 CLIMATE ACTION
Clean Energy	Energy Storage	Environmental Waste	Circular Economy	Carbon Capture, Utilization, and Storage

xinterra

Radically accelerating the creation, development and application of Materials that enable Sustainability, using Artificial Intelligence.

Why work with Xinterra?

Adopt an accelerated development workflow (10x faster!)

Improve sustainability footprint, enabled by new materials

Create new revenue streams, faster

Reduce cost of components, and increase profit

Embark in the Digital Transformation Journey

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