

# Advanced Modelling and AI for Sustainable Innovation

## Advancing research

Empowering scientific breakthroughs

## Accelerating innovation

Bringing ideas to real-world solutions

## Transforming industries

Enabling smarter technologies

### Advanced AI and big-data

Design and development of application-specific AI and big-data tools for optimized solutions

Development of key enabling innovation platforms, from digital twins to decision support systems

Bridging application sectors through digital integration

### Integrated digital technologies

### Safe and Sustainable by Design Materials and Applications

Digital integration and data science for sustainability, safety, circularity

### Automation of digital workflows

Enabling digital efficiency and high data throughput

Data-driven and knowledge-based integration frameworks based on specific applications

### High-performance computing (HPC) for innovation

Design and implementation of integrated, automated scalable and AI-enhanced modelling tools

### Simulations for key technologies

Multiscale modelling for advanced applications

## DATA-DRIVEN INNOVATION WITH AI AND SIMULATION

### From real use-cases to digital models

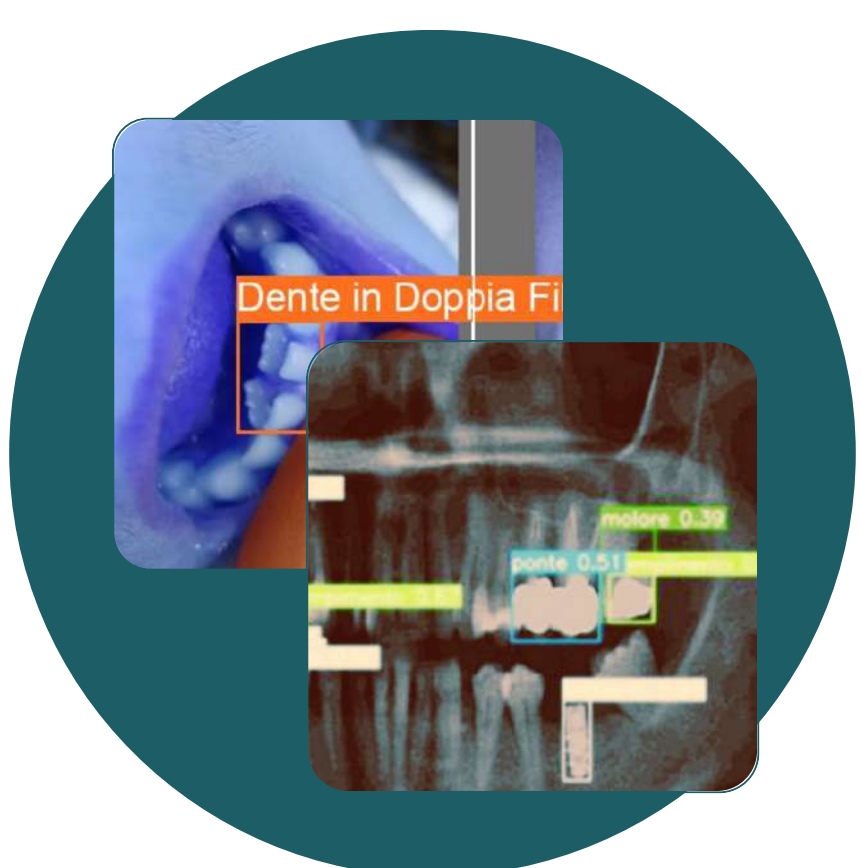
We are a **multidisciplinary research team** with a background in digitalization, AI, and advanced simulations, driving innovation in hi-tech applications. Our approach integrates multiscale modelling, big data, and high-performance computing to design and develop advanced materials, smarter systems and processes, and related technologies. By bridging physical and virtual models, we enable sustainable solutions in manufacturing, health, energy, quantum and green technologies, mobility and logistics.

### Global collaborations and impact

We actively participate in international projects, collaborations, and research networks, working alongside leading institutions, industries, and innovation hubs. We establish collaborative partnerships, offering our horizontal expertise and infrastructures to support R&D across different sectors and value chains.

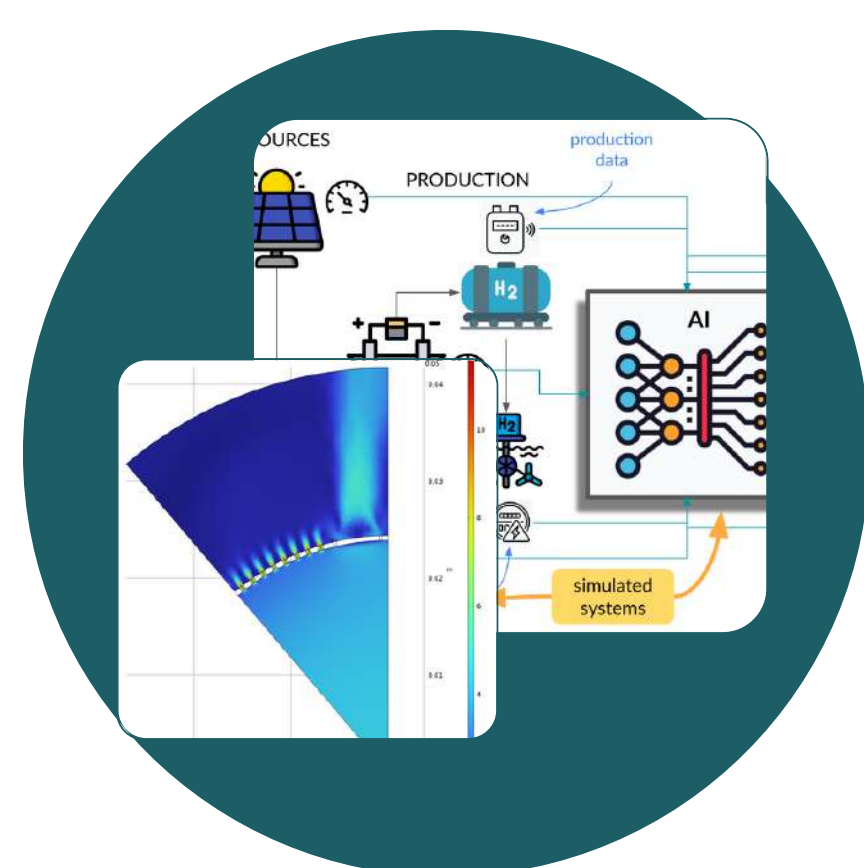
## APPLICATIONS

### Medical diagnostics



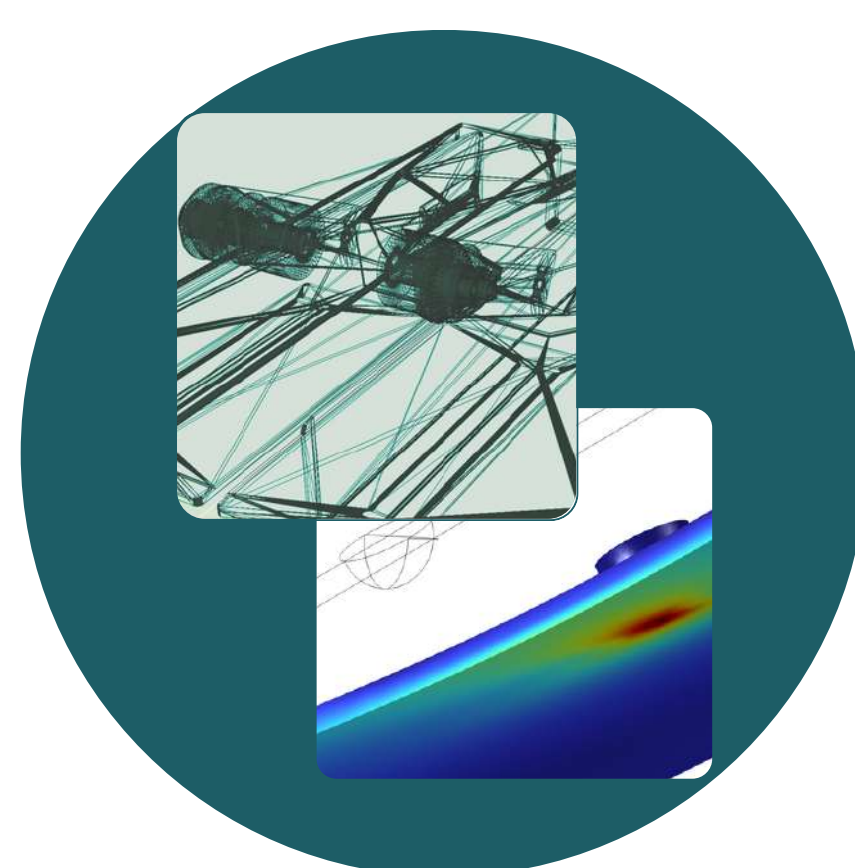
Predictive and integrated AI platforms

### Renewable energies



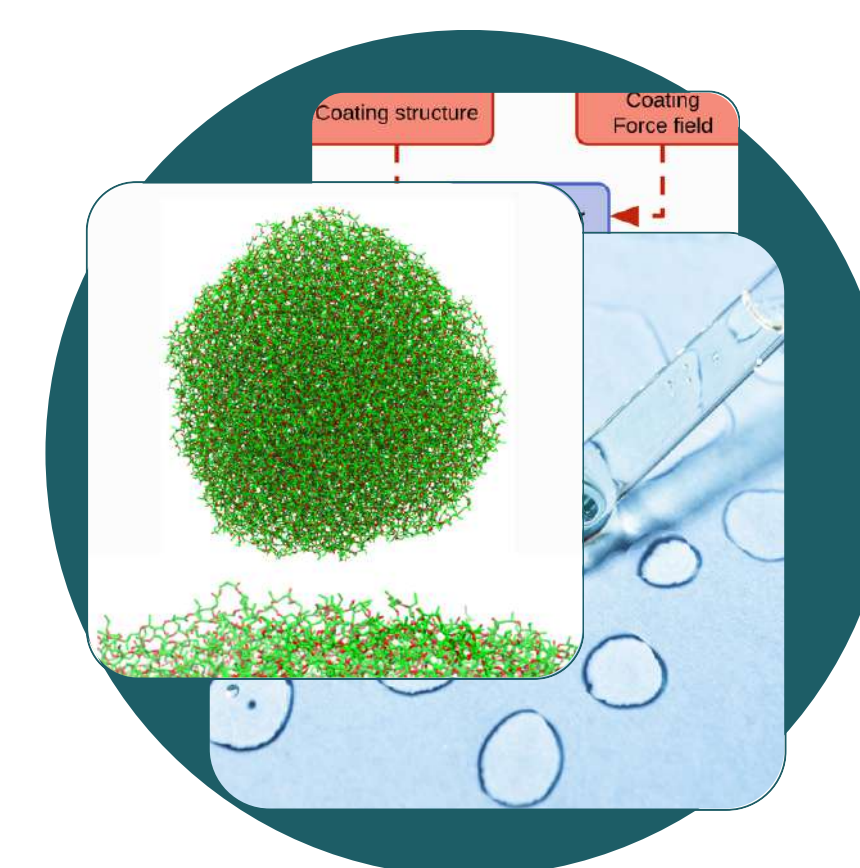
Energy production modelling and AI for management

### Packaging value chain



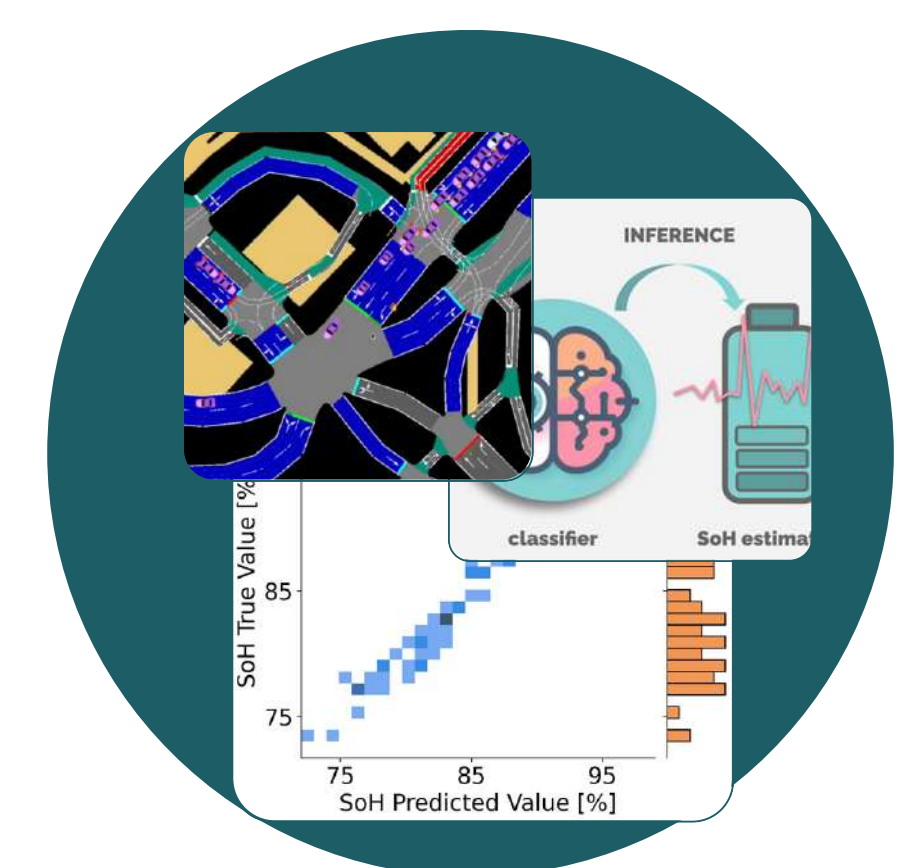
Digital twin and data-driven integration

### Sustainable coatings



Design of innovative materials and processes

### Mobility, logistics, batteries



Multi-level models and data-driven frameworks

