

IOF Consortium UAntwerp
active in Digital / Hightech

IDLab

INTERNET TECHNOLOGY & DATA SCIENCE LAB



IDLab focuses on the most profound challenges faced by industry, in order to realize digital transformation, optimize connectivity and convert data into valuable information. Nick Verhaege, Business Developer at IDLab explains what this actually means for companies:

“The IOF consortium IDLab of the University of Antwerp and imec conducts fundamental and applied research into wireless technologies, artificial intelligence and the Internet of Things (IoT).

With our experienced experts in both AI and connectivity, we develop technologies that surpass current solutions. Examples of such technologies are smart sensors for identification or measurements that

regulate their own effort or activity and AI systems that enable intelligent control of various devices.

Our researchers are fully committed to thinking from an industrial point of view. We do not work purely academically, but think along with your company to make your project a success. We therefore look on a case-by-case basis at what would be the best form of collaboration.

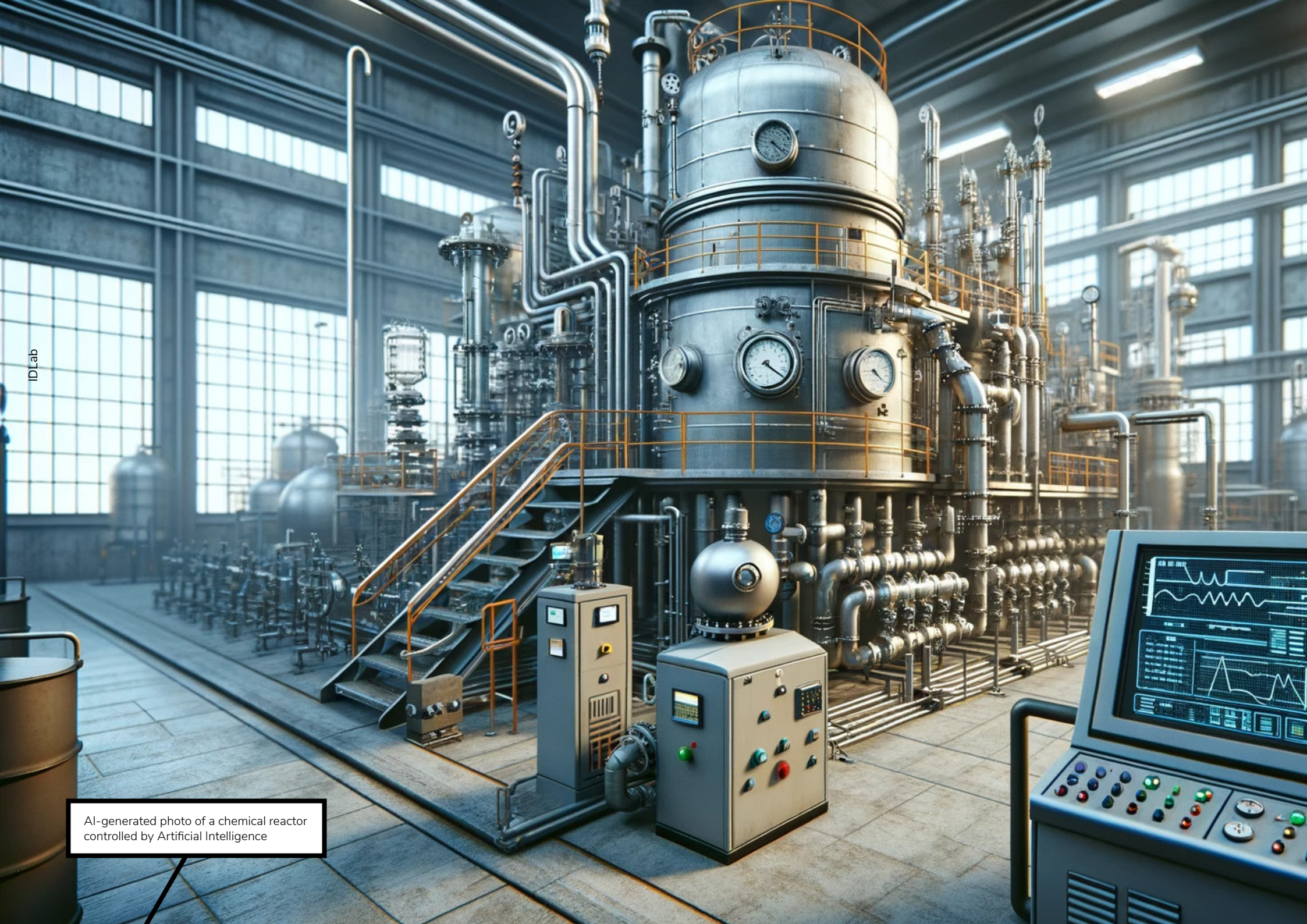
IDLab is a large research group and offers solutions in various application domains. Every day we build bridges to other scientific disciplines in our projects. In this way we combine a wide range of expertise and can offer it under a single flag.

At IDLab we are strongly aware that companies must become more sustainable and want to do so, but that this is always a matter of making trade-offs or optimization. That is

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why we help companies to take steps in their sustainability process through AI. By using AI, companies can make smart decisions about various parameters, such as energy consumption, material or raw material use.”

Curious about what solutions IDLab has in store for your company? Contact Nick Verhaege.



AI-generated photo of a chemical reactor controlled by Artificial Intelligence

Research groups and expertise

IDLab is a collaboration between UAntwerp and UGent and is a core research group within the leading research institute imec.

Imec

Imec is the Interuniversity Micro-Electronics Center, which focuses on research and development in the field of nano and digital technologies. As a world-renowned research center, imec believes in the contribution of technology to a better future. Locally, they put that vision into practice by supporting companies and governments in their sustainable innovation.

This partnership makes it possible for IDLab to not only assist companies with its own software knowledge, but also to link it to developments in the latest hardware within imec.

IDLab Antwerp

At UAntwerp, IDLab has an extensive team of experienced experts in the field of AI and connectivity:

- **Artificial Intelligence**
IDLab's AI researchers, computer scientists and engineers are

specialized and experienced in a wide range of application areas, including machine perception and representation, algorithm optimization in response to limited data availability and advanced control systems.

- **Wireless networks**

Wireless devices are increasing in number and diversity. Together with the varying connectivity requirements imposed by different applications, this poses various technological challenges for wireless networks. IDLab works in domains such as flexible and deterministic networks, Internet of Things and localization, tracking and sensing.

- **Modeling of complex models**

IDLab develops mathematical models to assess the performance of large and complex systems, with an emphasis on the analysis of communications and computer systems.

Because interdisciplinary collaboration is a part of IDLab's DNA, the necessary bridges are always built to other relevant disciplines, both within the

University of Antwerp and at the European level (e.g. within Horizon projects). In this way, IDLab is able to combine broad expertise while offering it under a single flag.

► **In DAP2CHEM we have developed a new strategy to implement a solvent switching process that has resulted in an up to 35% reduction in processing time, while reducing raw material use by 20% and consuming 7% less energy compared to standard processing methods.**

Quote from Johnson & Johnson

Collaboration is possible through ...

Co-development · Contract research · Doctorates · Use of equipment and facilities · Customized training · Service contracts

IDLab is ...

Artificial Intelligence (AI) · Connectivity · Sustainability ·
5G / 6G · Internet of Things (IoT) · Machine Learning · Big Data ·
Wireless networks · Modeling

IDLab



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Unique features of our equipment

IDLab has infrastructure that enables speed, computing power and flexibility in research projects:

- OCTA is a dynamic IoT platform that focuses on energy-conscious applications. Starting from this existing platform, new wireless technologies and sensors can be tested quickly, which makes cost-efficient research possible.
- DGX-2 is the world's first server with a computing speed of two petaflops. When training new AI systems, researchers have a much shorter wait for a result and the system is more under control before it goes to the cloud.
- With Smart Highway and CityLab we offer our customers and partners unprecedented flexibility to test wireless networks and connectivity in a unique, realistic environment, such as a highway or city.