WHAT'S NEW

DAEDALUS official Newsletter

Welcome to DAEDALUS

We are pleased to share the **first official newsletter of DAEDALUS**, a Horizon Europe–funded project **developing minimally invasive, 4D biomaterial-based solutions** for the treatment of colorectal diseases such as ulcerative colitis and familial adenomatous polyposis (FAP).

Our ambition is clear: to move **from invasive tissue removal toward regenerative, patient-specific therapeutic strategies**, improving quality of life while advancing clinical innovation.

Project Kick-off in Pisa

The DAEDALUS journey officially began with our **two-day Kick-off Meeting** (10–11 June 2025), hosted by the University of Pisa. Consortium partners from **across Europe** gathered together with the **Project Officer from the European Commission** to:

- introduce the **consortium and expertise**;
- present **work packages and responsibilities**;
- **align** on scientific, technical and strategic objectives;
- lay the foundations f**or four years of collaboration**.

These first discussions marked the beginning of an ambitious path in advanced biomaterials and regenerative medicine.

Read more about the Kick-off meeting here.

PAST EVENTS

EUROMAT 2025 (Granada, Spain)

ESB TERMIS 20225 (Turin, Italy)

Biofabrication 2025 (Warsaw, Poland)

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EUROMAT 2025 - Granada

Prof. Sonia Fiorilli (Politecnico di Torino) presented DAEDALUS at FEMS EUROMAT 2025. Her contribution showcased how **advanced biomaterials and regenerative strategies developed within DAEDALUS** can address colorectal diseases through innovative, minimally invasive approaches.

DAEDALUS Presented at ESB 2025 – Turin

DAEDALUS was officially presented during the **34th Annual Conference of the European Society for Biomaterials** (ESB 2025) in Turin.
Project Coordinator **Prof. Giovanni Vozzi** (Università di Pisa) introduced the project during the **joint ESB & TERMIS session** with a lecture titled:
"Advanced 4D biomaterials for mucosa and submucosa treatment in patients affected by colorectal diseases."

The presentation highlighted how **DAEDALUS combines biomaterials science, endoscopic innovation, and regenerative approaches** to enable less invasive treatments and improve patient outcomes.

Biofabrication 2025 – Warsaw

DAEDALUS was featured at **Biofabrication 2025** (14–17 September, Warsaw, Poland) during the symposium: *"Bioprinting Approaches in the EU projects"*, moderated by **Prof. Giovanni Vozzi and Prof. Ayça Bal Öztürk**.
During the conference:

- **Dr. Irene Chiesa** (Università di Pisa) presented DAEDALUS.
- Her contribution was recognised with the **Best Oral Presentation Award**.

We are **extremely proud of this achievement**, which reflects the **scientific excellence** within our consortium.

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6 months of DAEDALUS celebrated in Montpellier

The consortium gathered in **Montpellier** (France) on **December 18-19, 2025** for a key **in-person meeting**. Over two days, partners:

- shared technical progress
- discussed ongoing activities
- aligned on upcoming milestones
- strengthened interdisciplinary collaboration

These meetings are essential to ensure coherence, scientific rigor, and **coordinated progress across the project**.

The science of 4D biomaterials

Traditional medical implants are **static**, but the human body is **dynamic**. DAEDALUS is developing **4D biomaterials designed to change their shape and properties over time** in response to specific biological stimuli.

- Bioactive scaffolds: these are not simple mechanical tubes but **structures that mimic the natural** cellular environment.
- **Guided healing**: the scaffolds provide the necessary architecture for cells to migrate and **rebuild the intestinal mucosa and sub-mucosa**.
- Dynamic integration: **the material evolves with the patient**, reducing the risk of incomplete regeneration or excessive scarring.

Read more about 4D biomaterials in medicine on our website.

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Re-epithelialization: restoring function

DAEDALUS shifts focus **from passive repair to active biological regeneration**. We restore the natural integrity of the intestinal wall instead of using simple physical patches.
Our 4D scaffolds serve as temporary templates for natural tissue growth. These bioactive structures guide the body to rebuild the mucosal barrier and then safely degrade. By using bioprinting and biomimetic materials, we **avoid permanent complications**. This strategy empowers **the body to heal itself** for a sustainable and long term recovery.

Discover our mission and follow the research updates on our website.

Stay Connected

DAEDALUS is **more than a research project** , it is a collaborative European effort to rethink colorectal care through **regenerative innovation**.

Follow our journey:
Visit our website
Follow us on LinkedIn

Stay tuned for our next newsletter: more updates, scientific milestones, and community engagement initiatives are coming soon.

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