BIOMEDIX International Hackathon on Biomedical Engineering and Additive Manufacturing Technologies – *Poznań University of Technology, Poland – May 21, 2026*

On May 21, 2026, Poznań University of Technology (PUT), Poland, hosted the BIOMEDIX International Hackathon on Biomedical Engineering and Additive Manufacturing Technologies. The event was organized within the framework of the Erasmus+ KA220-HED project BIOMEDIX – Biomedical Innovations through Digital Transformation of Additive Technologies and Knowledge Exchange, bringing together students, academic staff, researchers, and industry representatives from the project consortium.

The hackathon was preceded by a special BIOMEDIX session within the international **MANUFACTURING 2026 Conference**, where consortium partners presented their latest research activities in biomedical engineering, additive manufacturing, digital technologies, and healthcare innovation. This session provided participants with an overview of current scientific challenges and emerging technologies, serving as inspiration for the hackathon activities.

The main objective of the hackathon was to encourage interdisciplinary collaboration and innovation in biomedical engineering by engaging students in the development of novel solutions addressing real-world healthcare challenges. Participants worked in international teams composed of students from different partner institutions and disciplines, supported by academic mentors and industry experts.

During the event, students identified unmet clinical needs and developed innovative concepts utilizing additive manufacturing, bioprinting, digital design, medical imaging, artificial intelligence, biomaterials, and regenerative medicine technologies. The teams followed an innovation-oriented workflow including problem identification, concept generation, feasibility assessment, business model development, and final pitch preparation.

Several innovative project concepts were proposed during the hackathon, including:

- **WoundPrint AI** – an AI-assisted workflow that converts clinical wound images into personalized CAD models and 3D-printable hydrogel wound patches for patient-specific treatment.
- **SKIN CURE** – a patient-specific conductive bioprinted dressing designed to restore bioelectrical signaling in chronic wounds and accelerate tissue regeneration.
- **BurnGuard** – a smart burn dressing capable of detecting early signs of infection through colorimetric sensing and supporting localized antimicrobial treatment.
- **Advanced Modular Prosthetic System** – an integrated prosthetic platform combining implanted muscle sensors, osseointegrated skeletal fixation, and interchangeable prosthetic modules for enhanced comfort and functionality.

- **Bioactive Cranial Implant Coating** – an innovative cranial implant concept utilizing modified GelMA hydrogels and bioactive coatings to improve osseointegration, angiogenesis, and tissue regeneration.

Throughout the day, participants attended mentoring and consultation sessions with professors and experts from partner universities. These sessions provided guidance on technical feasibility, clinical relevance, additive manufacturing methods, regulatory considerations, and commercialization pathways.

The hackathon concluded with a final pitch session during which each team presented its concept, implementation strategy, expected impact, and future development plan. Presentations were evaluated by an international panel of experts who provided constructive feedback and recommendations for further development.

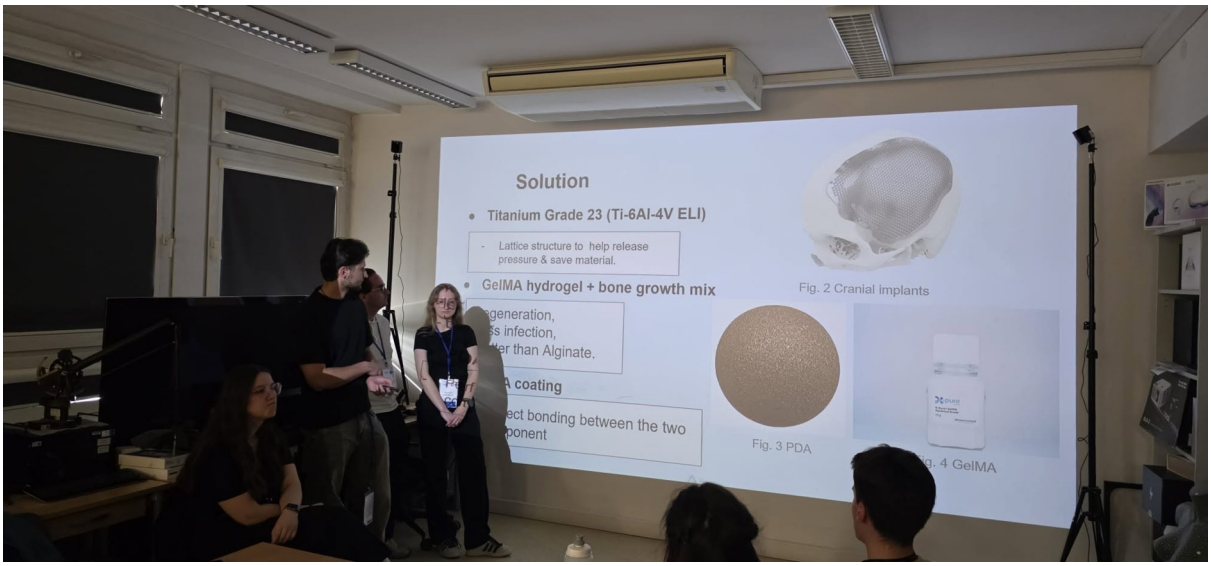
Beyond the technical outcomes, the event fostered international collaboration, interdisciplinary teamwork, entrepreneurial thinking, and knowledge exchange among students and staff from the BIOMEDIX consortium. The hackathon also contributed to the development of innovation and digital competencies that are essential for future biomedical engineers and healthcare technology professionals.

The concepts developed during the event will serve as a basis for further educational and research activities within the BIOMEDIX project, including bachelor's, master's, and doctoral theses, student innovation projects, scientific publications, and future collaborative initiatives involving academic and industrial partners.

The consortium would like to thank Poznań University of Technology for hosting the event and all students, mentors, researchers, and industry representatives for their active participation and valuable contributions to the success of the hackathon.

The BIOMEDIX project continues to promote international cooperation and innovation in biomedical engineering through digital technologies, additive manufacturing, and interdisciplinary knowledge exchange, supporting the development of next-generation healthcare solutions.


BIOMEDIX Hackathon Poznan May 2026
HACKATHON
MAY 2026
Universidad Politécnica de Cartagena
ViscoTec


Solution
Titanium Grade 23 (Ti-6Al-4V ELI)
Lattice structure to help release pressure & save material.
GelMA hydrogel + bone growth mix
Fig. 2 Cranial implants
Fig. 3 PDA


The Team Behind
BurnGuard
Smart dressing for early infection warning.
BurnGuard
Augusta
Manufacturing Engineering Student
Role: Sustainability • Product Design
Iwona
Dentistry Student
Role: Medical Validation
Artjom
Medical Engineering Student
Role: Manufacturing • Material Selection
Darya
Biomedical Engineering Student
Role: Financials • Implementation
iverse minds. Shared mission.
ealthier tomorrow.