PolTiss

TRANSFORMABLE POLYMER IMPLANT FOR

TISSUE REPAIR

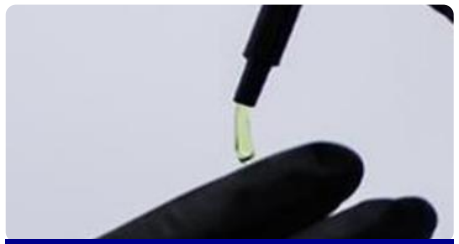
We are on a mission to radically improve the safety and quality of life for patients and the comfort of surgeons

PROF. MIROSLAWA EL FRAY

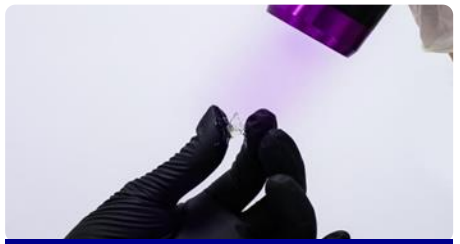
Inventor, Professor at the West Pomeranian University of Technology, Szczecin, Poland

Expert in polymer and biomaterials engineering and science, author of >150 research papers, PI of over 15 research projects, holder of 12 patents

THE TECHNOLOGY



Material injected of a liquid



Transformation under UV light

Flexible & extremely adhesive patch in seconds

KEY ADVANTAGES

- **Raw materials based on natural and renewable resources**
- **Slow degradation = no residual material in the body**
- **Injectable liquids of tuneable viscosity**
- **Especially suitable for laparoscopic and robotic surgeries (minimally invasive)**
- **Fast procedure (transformation from liquid to solid in seconds)**

STRONG

PhotoBioCure® TECHNOLOGY

- Over 15 different formulas of materials with tuneable properties patented
- New patents are being filed currently to explore new areas of application
- Strong know-how and expertise in polymer chemistry and biomaterials

IP PROTECTION

US/PL PATENTS GRANTED

One formulation already tested for one medical application – HERNIA REPAIR

ACKNOWLEDGED TECHNOLOGY

eit Health · INNOSTARS AWARDS 2021 · iNAM innovation network for advanced materials · ADVANCED MATERIALS COMPETITION · MIT ENTERPRISE FORUM POLAND · SEAL OF EXCELLENCE · You Nick Mint Venture capital. · Fundacja Rozwoju Kardiochirurgii im. prof. Zbigniewa Religi · West Pomeranian University of Technology Szczecin · The National Centre for Research and Development

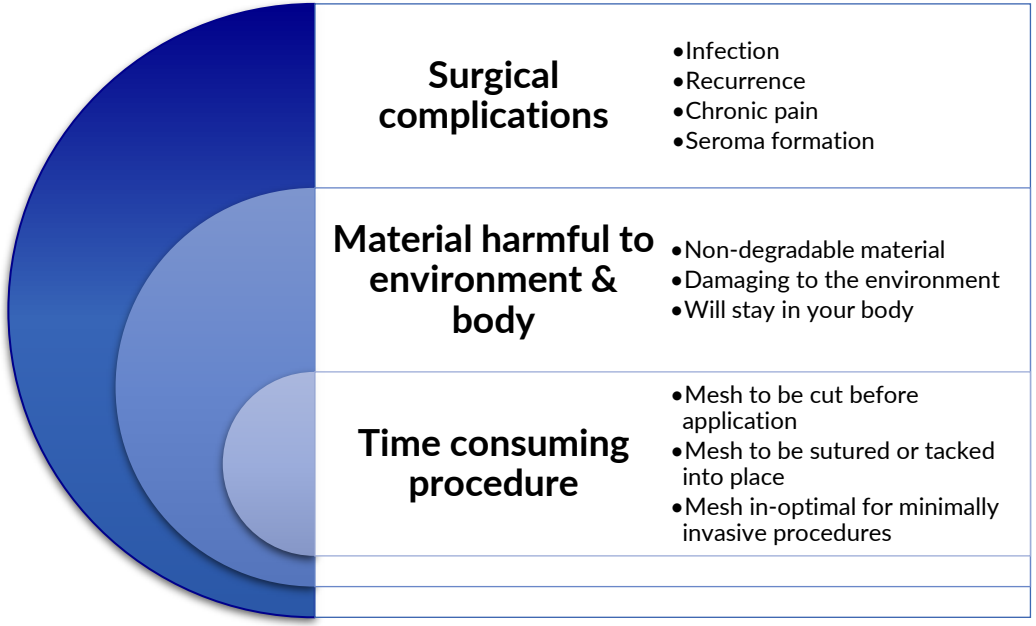
PRECLINICAL STUDIES OF ONE FORMULATION COMPLETED

- Confirmed biocompatibility (in compliance with the guidelines of ISO 10993)
- Confirmed functionality properties (defined as the lack of hernia recurrence)
- Slow biodegradation
- Lack of hemolytic, toxic, pyrogenic, genotoxic and allergic effects
- Mechanical properties matching well those of connective tissue of the human abdominal wall, thus providing sufficient mechanical strength
- Successful first implementations in patients.

The unmet need for innovation in current

HERNIA TREATMENT*

The use of a polypropylene (plastic) mesh net is the standard treatment in hernia repair surgery worldwide. But it comes with major potential challenges for patients and surgeons

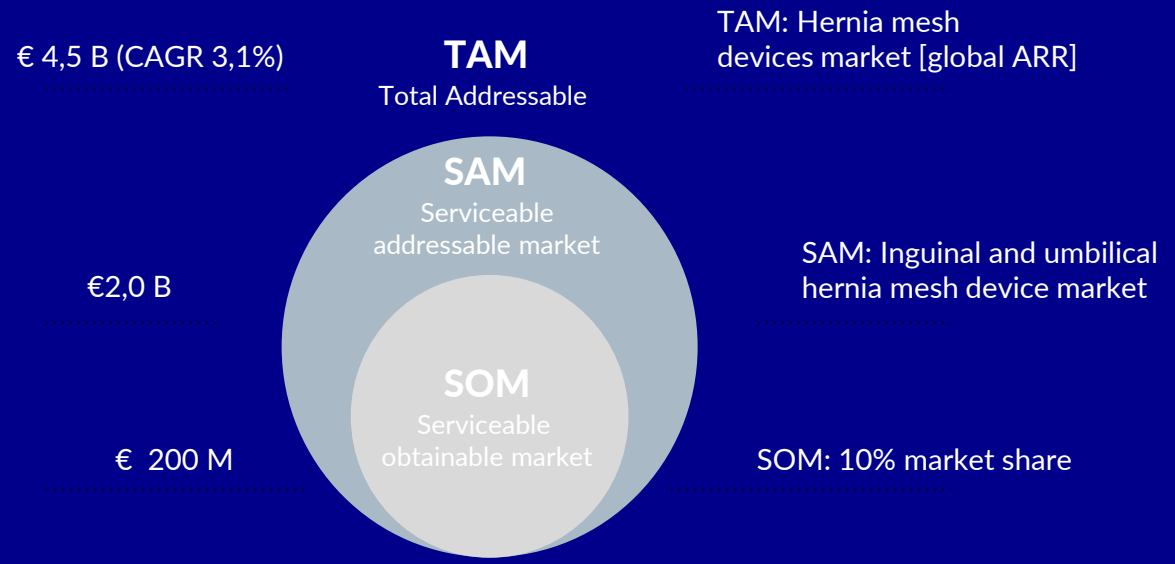


*Hernia occurs when an internal part of the body pushes through a weakness in the muscle or surrounding tissue wall
**Sources: https://www.gminsights.com/industry-analysis/hernia-repair-devices-market#:~:text=According%20to%20an%20article%20published,number%20of%20hernia%20repair%20procedures.
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5618132/
*** Source: https://link.springer.com/article/10.1007/s00268-018-4642-6

The

MARKET for hernia repairs

Tier 1 market, hernia mesh devices



* HERNIA MESH DEVICE MARKET - FORECAST (2022 - 2027)

€ 1,44 bn in the US, CAGR 3.2%
https://www.marketdataforecast.com/market-reports/na-hernia-mesh-devices-market

€ 1,11 bn in the EU, CAGR 2.8%
https://www.marketdataforecast.com/market-reports/europe-hernia-mesh-devices-market

OTHER MEDICAL APPLICATIONS

PHOTOBIOCURE® - MULTIPLE APPLICATIONS TO BE EXPLORED

Global Small bone and joint orthopedic devices market size and share analysis 2023-2028

€4,19 bn , CAGR 6,7%

https://idataresearch.com/product/small-bone-and-joint-devices-market/

Surgical Sealants and Adhesives market – forecast 2023- 2028

€5.19 bn, CAGR 9.6%

https://www.marketdataforecast.com/market-reports/surgical-sealants-and-adhesives-market

Aesthetic surgery

Cardiac surgery

OTHER MEDICAL APPLICATIONS

PHOTOBIOCURE® - MULTIPLE APPLICATIONS TO BE EXPLORED

- Woundcare
- Electrodes
- Aesthetic surgery
- Cardiac surgery

LEADERSHIP

PolTiss TEAM

PROF. MIROSLAWA EL FRAY

Board Member & founder

Inventor, Professor at the West Pomeranian University of Technology, Szczecin

Research cooperation with DePuy Johnson & Johnson, Uniqema/Croda, Honda,Europe, Philips.

TOMASZ LASECKI

Board Member COO & founder

Entrepreneur and consultant Skilled in fundraising, business development

Investor in SDS Optic, PROSOMA. Partner in POMERANGELS VC
Former Managing Director in Amber Business Angels Network

GOKHAN DEMIRCI

CTO

Experienced Scientist with expertise in photocuring polymers

PhD at Maria-Curie Sklodowska University. Previous cooperation with Aston University (UK), Denmark Technical University (DK), Cyprus University of Technology (CY), Lodz Polytechnic(PL). 4 research projects.

ADVISORS

MEDICAL BOARD

Andrzej Ratajczak

M.D./PhD

Experienced Surgeon. Former President of Polish Hernia Society

Prof. Piotr Prowans

M.D.

Head of the Clinic of Plastic Surgery, Endocrinology and General Surgery, Pomeranian Medical University

Roman Kustosz

Manager at Foundation of Cardiac Surgery Development – leading R&D centre for medical devices in Poland

PRODUCT/BUSINESS/REGULATORY

Joachim Kohn

Leader in the field of biomaterials science, Founder of New Jersey Centre for Biomaterials. His technologies were used in devices implanted to 350.000 patients in 46 countries

Karina Candrian

Partner in MEDICALBOARD 20 years' experience in the Healthcare industry (Synthes, Sunstar, Degradable Solutions).

Wojtek Faszczewski

Business angel Manager with experience in managing, sales and marketing of medical devices, working for a global medical device manufacturer

SOREN KELLER

Life science executive. Skilled in strategy, finance, business development, marketing & sales

Former CEO/COO/Board Member. Employed at Zealand Pharma, Bionor Pharma,

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thomas@poltiss.com