

# BIOACTIVE HEALING SURGICAL MESHES

## IMPROVING OUTCOMES IN SURGERY



DR GERARD KAIKO AND DR BEHNAM AKHAVAN

**Harnessing cross-disciplinary expertise to develop innovative solutions.**

The team has leading capabilities and expertise in biomaterials engineering in nanoscale, plasma surface bio-engineering with bioactive molecules and soft matter as well as identifying and validating bioactive compounds and stem cell technology to create biologically activated surgical meshes, coatings, and sutures that can be applied to enhance healing, reduce infection, and improve clinical outcomes. The team's research aims to bridge the gap between fundamental science and practical applications, driving technological advancements for better patient outcomes.

### COMPETITIVE ADVANTAGE

- Cross-disciplinary expertise including surgeons and academics
- Strong collaborations with key stakeholders
- Team with extensive industry experience.

### PARTNERS

- Hunter New England Health
- Hunter Medical Research Institute (HMRI)
- 3Regemat3D, Spain.

### SUCCESSFUL RESEARCH APPLICATION

- Stem cell technology applied into a national interventional clinical trial: ORIGIN-1
- Soft-tissue integrating dental implants
- 3D bioprinting with in situ surface functionalisation.

### MORE INFORMATION

Dr Behnam Akhavan

E: [behnam.akhavan@newcastle.edu.au](mailto:behnam.akhavan@newcastle.edu.au)



Dr Gerard Kaiko

E: [gerard.kaiko@newcastle.edu.au](mailto:gerard.kaiko@newcastle.edu.au)

