

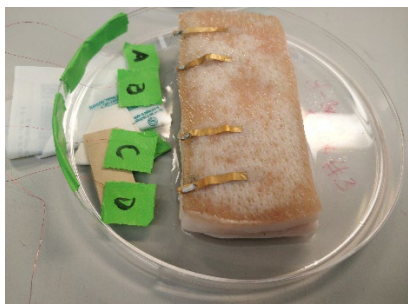


Charlemont grant report

Recipient name:	Dr. Declan O'Loughlin
Discipline and subject area:	Sciences
Amount and year awarded:	€2,400. in 2023
Title of project:	Non-invasive Hydration Monitoring using Wearable Bioelectronic Electrodes.

Summary of findings:

The key achievements from this grant relate to examining the relationship between hydration status and impedance measurements of the skin using non-invasive wearable graphene electrodes. Results with both pig skin models and human volunteers suggest that impedance changes over time due to dehydration of the model and the subject.



Plans for continuing collaboration:

I intend to publish the results from the initial experimental work with my collaborators and I continue to plan further research with Dr. Dmitry Kireev and Prof. Demi Akinwande. Specifically, we are looking at a joint research project where experimental data is gathered in the US using the novel electrode platform and processed in Ireland.

Publications associated with this project that you have been involved in:

Upcoming journal article with the experimental data gathered regarding the change in hydration over time of both the models and human volunteers. These results are one of the first controlled dehydration experiments using small and non-invasive electrodes.



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Dissemination and plans for future dissemination:

A subsequent conference article is also planned regarding the models and the methods for controlling the hydration of the pig skin models in particular.

Outreach and engagement activities:

Once published, these results will be included in my public and patient engagement activities. I regularly visit schools and engage with patient groups as part of my work.