**PRESS RELEASE**

**Reducing noise with advanced acoustic materials: Irish physicists selected as finalists for the European Inventor Award 2023**

* **Inventors Rhona Togher and Eimear O’Carroll developed a material solution to attenuate loud noise**
* **It can be integrated into household appliances, as well as in the automotive, construction, and aerospace industries**
* **Due to noise pollution, 6.5 million people in Europe suffer chronic high sleep disturbance[[1]](#footnote-1)**

**Munich, 9 May 2023** - According to the European Environment Agency (EEA) approximately 20% of the EU population lives in areas with unacceptable noise and vibration levels.High noise levels have been linked to poor sleep and higher instances of heart problems. Due to noise pollution, the EEA estimates that 22 million people across Europe currently suffer from chronic high annoyance, whilst 6.5 million suffer chronic high sleep disturbance. To address this issue, Irish inventors Rhona Togher and Eimear O’Carroll created an **advanced acoustic material that reduces noise**. **Togher and O’Carroll are finalists in the ‘SMEs’ category of the European Inventor Award** **2023**, in recognition of their promising work. They were selected from over 600 candidates for this year’s edition.

**A sound solution for millions of people**

Noise-induced hearing loss (NIHL) is the most common health problem caused by loud sounds. Exposure to loud noise can also cause high blood pressure, heart disease, sleep disturbances, and stress. Togher and O’Carroll’s invention, SoundBounce™, is a composite technology that reduces the negative effects of loud noise. It consists of a responsive material housed within a cellular structure that responds to agitation by becoming liquid and absorbing energy. One of its innovations is the invention’s cellular structure; the second is a thixotropic gel placed inside the cells. Once sealed, they work together to **dampen sound, reducing noise transmission from one space to another**.This new material can also be integrated into machinery and vehicles to reduce noise output. It can be used in the automotive, construction, aerospace and home appliance industries.

**This material is particularly effective at low frequencies, which present a significant challenge** connected to products with engines, vibrations, and airflow. SoundBounce’s **thinner material** means that aeroplanes or vehicles using it could be lighter, thus reducing fuel consumption and leaving more space. In addition to the environmental advantages related to noise reduction, the materials used to make SoundBounce have a low environmental impact as they are non-toxic, and recyclable at end of life**.**

**Inspired by a love of music, who is making our world quieter?**

O’Carroll and Togher met when they were 15 in secondary school and bonded over their love of music.They were particularly curious about how people experience noise and wanted to lessen the adverse effects of overexposure to loud sounds. “*Having experienced noise-damaged hearing in the form of tinnitus after going to noisy gigs, we were determined to find a way to alleviate the ringing in our ears”,* explained Togher. “*As we explored options for further R&D funding for the project, we were encouraged by the Local Enterprise Office in our hometown of Sligo to turn our invention into a business. Their support and encouragement were invaluable in those early days*”, added O’Carroll.  
  
The result was the inception of their company Lios in 2009, which Rhona Togher heads as the CEO and co-founder. She has paved the way for innovation with her expertise in physics having attended the University College Dublin. Eimear O’Carroll trained as a physicist at the University of Edinburgh. In her current role as CTO and co-founder of Lios, O’Carroll is the bridge between Lios' customers and the product development team focusing on creating effective noise reduction technologies. Since SoundBounce was created, **Togher and O’Carroll’s company has developed partnerships with renowned organisations such as the European Space Agency.**

The Irish duo behind the innovation have been named one of three finalists in the ‘SMEs’ category for this year’s European Inventor Award, recognising outstanding inventors with inventions patented in Europe**.** **The winners of the 2023 edition of the European Inventor Award will be announced at a hybrid ceremony on 4 July 2023** in Valencia (Spain). This ceremony will be broadcast online [here](https://inventoraward.epo.org?mtm_campaign=EIA2023&mtm_keyword=EIA-pressrelease&mtm_medium=press).

Find more information about the invention’s impact, the technology and the inventors’ stories [here](https://new.epo.org/en/news-events/european-inventor-award/meet-the-finalists/rhona-togher-eimear-ocarroll?mtm_campaign=EIA2023&mtm_keyword=EIA-pressrelease&mtm_medium=press&mtm_group=press).

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**About the European Inventor Award**

The European Inventor Award is one of Europe's most prestigious innovation prizes. Launched by the EPO in 2006, the award honours individuals and teams, who have come up with solutions to some of the biggest challenges of our time. The finalists and winners are selected by an independent jury comprising former Award finalists. Together, they examine the proposals for their contribution towards technical progress, social and sustainable development, and economic prosperity. All inventors must have been granted a European patent for their invention. Read more [here](https://new.epo.org/en/news-events/european-inventor-award?mtm_campaign=EIA2023&mtm_keyword=EIA-pressrelease&mtm_medium=press) on the various categories, prizes, selection criteria and livestream ceremony to be held on 4 July 2023.

**About the EPO**

With 6,300 staff members, the [European Patent Office (EPO)](https://www.epo.org/?mtm_campaign=EIA2023&mtm_keyword=EIA-pressrelease&mtm_medium=press&mtm_group=press) is one of the largest public service institutions in Europe. Headquartered in Munich with offices in Berlin, Brussels, The Hague and Vienna, the EPO was founded with the aim of strengthening co-operation on patents in Europe. Through the EPO's centralised patent granting procedure, inventors are able to obtain high-quality patent protection in up to 44 countries, covering a market of some 700 million people. The EPO is also the world's leading authority in patent information and patent searching.

1. From the European Environment Agency’s Briefing, Health risks caused by environmental noise in Europe, available here: https://www.eea.europa.eu/publications/health-risks-caused-by-environmental [↑](#footnote-ref-1)