| Company Details |
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| Country: Republic of Ireland  Company: [Lios](http://lios-group.com), [Sound Bounce](http://sound-bounce.com), [Sound Relief](http://sound-relief.com)  Social Media Handle(s): [LinkedIn](https://www.linkedin.com/company/liosgroup), [Twitter](http://www.twitter.com/liosgroup)  Product video: Video 2: [SoundBounce In Industry](https://www.youtube.com/watch?v=vaK6rWD76bc)  Video 1: [SoundBounce Advanced Material Technology](https://www.youtube.com/watch?v=Ggq2Frx-N_U) |

## LIOS

Lios is an advanced materials company – building technology to eradicate harmful noise pollution. Based in Dublin Ireland, Lios employs a growing international team of 15 people, the company is dedicated to creating a cleaner and quieter world.

Co-Founders Rhona Togher & Eimear O’Carroll have worked together since 2009. Trained as physicists, Togher and O’Carroll apply their knowledge and expertise to a range of modern-day challenges, creating elegant and practical solutions. Frustrated with the pace of advancements in their field, the founders witnessed incremental developments which fell short of delivering meaningful change. Both founders suffered from tinnitus at a young age, which led them to investigate the condition and develop SoundRelief – a tinnitus sound therapy.

Building upon the successful launch of a new product, the team developed SoundBounce – a revolutionary new material designed to tackle noise challenges. This advanced material has applications across multiple industries, including construction, automotive, and aerospace, and is poised to transform the world into a quieter place for future generations. SoundBounce is a non-toxic, eco-friendly solution to noise pollution and is thinner and more effective than traditional solutions at attenuating noise.

Over the last decade, the business has grown to foster a spirit of innovation and a passion for developing real-world solutions. Building a team of experts in material science, acoustics, licensing, design, marketing, predictive modelling, project management, and sales.

Lios’ accolades include She Loves Tech Global Winner, INAM Advanced Materials Competition, JEC Startup Booster, Hello Tomorrow New Materials Prize, and the Irish Times Innovation Awards.

[lios-group.com](https://www.lios-group.com/)

[sound-bounce.com](https://www.sound-bounce.com/)

[sound-relief.com](https://www.sound-relief.com/)

| About the inventor(s) |
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| * O’Carroll and Togher met at age 15 in secondary school and bonded over their shared interest in music. * They were interested in how they were experiencing noise damaged hearing from overexposure to loud noise and how they could try to improve that. * They created a sound therapy solution for tinnitus and entered it into the BT Young Scientist and Technology Exhibition – Ireland’s largest science fair. Initially, they had not considered turning the project into a business. But with a huge demand from the public visiting the exhibition and with support from the Local Enterprise Office, they developed an online platform to provide access to their sound therapy. * O’Carroll went to the University of Edinburgh, whilst Togher went to the University College Dublin, both studying physics. * The negative impact of noise pollution was clear from the testimonies of early sound therapy customers, so they created SoundBounce – an advanced material for noise reduction. * In the following years, they successfully secured EUR 3.7 million in funding to commercialise this new invention. * This significant funding allowed them to advance their SoundBounce technology from concept to a fully functional prototype product. * Since, their company has grown from strength to strength, and they have developed partnerships with renowned organisations such as The European Space Agency. * The duo have also been invited to conferences and events globally in Riga, London, Rotterdam, San Francisco, Boston, Singapore, Paris, and many more. Invited to speak about their work at internal events held by corporations like BT, EY, Accenture, and Google. |

| Description of the SoundBounce technology and the invention |
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| * O’Carroll and Togher initially developed a headset containing a composite material that can attenuate sound and reduce effects that can cause hearing damage from loud noises such as music and industrial machinery. * The product contains an advanced acoustic material containing thixotropic fluid, which responds to agitation by becoming liquid and therefore absorbing energy in the system. * One of the invention’s innovations is its cellular structure. The second is an advanced material which is placed inside the cells. Once sealed, they together work to dampen noise, reducing the transmission of noise from one space into another. This is particularly effective at low frequencies. * This concept can also be adapted to be integrated into machinery and household items in order to reduce their noise output. It can be used in the automotive, construction, aerospace, and home appliance industries. * The material O’Carroll and Togher have developed is thinner than conventional soundproofing materials. It is perfect for use in the automotive industry, as lighter soundproofing makes vehicles lighter and results in less fuel consumption. Thinner soundproofing also allows for more space for other items, such as batteries. * O’Carroll and Togher are currently working with the European Space Agency to develop acoustic insulating technologies for space applications. Currently, acoustic materials in aerospace are thick to dampen the high levels of low-frequency noise. However, thick material reduces the space available for the payload or cargo. SoundBounce's thinness could enable larger payloads and, therefore, lower the cost per payload. |

## Rhona Togher BIO

Rhona Togher is the CEO and co-founder of Lios. She has been leading the company since 2009 with her passion and determination to innovate. Her background in physics has given her a unique perspective and the ability to develop groundbreaking products that have garnered the attention of the global market. With her strategic approach, Rhona has successfully secured €3.7 million in funding and filed patents, allowing Lios to advance its SoundBounce technology from concept to a fully-functional prototype product. Under her leadership, the company has experienced tremendous growth. She manages all aspects of the business with a keen eye for detail, ensuring that every aspect functions smoothly and efficiently.

Rhona has shared the story of the Lios journey, and her thoughts on the evolution of the industry at conferences and events globally in Riga, London, Rotterdam, San Francisco, Boston, Singapore, Paris, and many more. She has also been invited to speak at internal events by corporations like BT, EY, Accenture, and Google.

In addition to her duties as CEO, Rhona is an active participant in the global startup community. She is an ambassador for Irish female entrepreneurship working with Enterprise Ireland, the iWish foundation and the Ada Lovelace initiative to empower and support women in the tech sector. She is a board member of Scale Ireland, an independent nonprofit that works to secure a more supportive policy environment for Irish innovation-driven enterprises.

For her outstanding achievements and contributions to the tech industry, Rhona has been recognised by several noted awards, including the Irish Tatler Women of the Year Awards, Ireland's Best Young Entrepreneur, Business Post 30 Under 30, and the Irish President's Celebration of Female Entrepreneurship. She has been featured and interviewed by prominent media outlets, including TechCrunch, Irish Times, Business Post, and Tech Node.

[linkedin.com/in/rhonatogher](https://ie.linkedin.com/in/rhonatogher)

## Eimear O’Carroll BIO

Eimear O'Carroll is the Chief Technology Officer (CTO) and co-founder of Lios.

Trained as a physicist at The University of Edinburgh, Eimear applies her knowledge and expertise to global noise challenges, creating elegant and practical solutions. She co-invented Lios’ innovative noise reduction technologies.

In her role as CTO, Eimear is the bridge between Lios' customers and the product development team. Experienced in current industry requirements and upcoming regulatory and industrial changes, Eimear identifies commonalities in requirements from different industries and then examines how SoundBounce can solve those challenges, continually looking at what future R&D activities are required to evolve with changing industry needs. The business has grown through successful customer pilots, commercial and technical partnerships, greater investment, and an expanded team of passionate experts.

Well-versed in the latest industry trends and regulations, Eimear is always looking for new and innovative ways to address global noise challenges.

Eimear has previously spoken on the topic of advanced materials and their role in creating a sustainable future. She has been invited to share her insights at global events such as the International Automotive Show (IAA) in Germany and was celebrated as part of the JEC Composites Magazine Leading Women in Composites series. Her passion for creating better advanced materials and her unwavering commitment to innovation makes her a valuable asset to the industry and a leader in her field.

[linkedin.com/in/eimearocarroll](https://ie.linkedin.com/in/eimearocarroll)