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## Graphene's Shield: NanoEMI Develops Composites to Block Electromagnetic Radiation

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The Polish startup aims to protect electronic devices from interference.

Based in [Poland](#), [NanoEMI](#) has been working on the development, production, validation and deployment of pure, high-quality graphene flakes. The company joined the [Graphene Flagship](#) as an Associated Member in 2022 and is now focusing on composites that can mitigate the problem of the electromagnetic interference (EMI) – a phenomenon that occurs when electromagnetic waves interfere with electronic devices, causing malfunctions or disruptions.

Graphene is capable of blocking EMI due to its unique structure and electrical properties. When electromagnetic radiation comes into contact with graphene, the electrons in the material can move freely, absorbing the energy of the radiation and converting it into heat. This conversion of electromagnetic energy into heat reduces the intensity of the radiation and prevents it from interfering with electronic devices. The graphene lattice can also act as a filter, allowing certain frequencies of electromagnetic radiation to pass through while blocking others.

NanoEMI has demonstrated the effectiveness of their composites in blocking electromagnetic radiation, with up to 70 dB per 1 mm of sample thickness. This makes their technology a formidable competitor to traditional metal-based solutions currently dominating the market.

NanoEMI's R&D activities resulted in three patent applications, one has been already granted. Two of them are related to the methods of production of graphene flakes and one is disclosing the method of composite production.

Thanks to a venture capital investment, the team has initialized the building of the first production laboratory, which will be fully operational in early 2023. This investment of about 500,000 EUR will allow the company to set up pilot routine production of pure graphene flakes and EMI composites.

NanoEMI has also taken part in several graphene-related events over the last few years and launched cooperations with key companies in the sector.

“We’ve been thrilled to join the community of graphene producers and developers of unique graphene applications. We hope to develop our position as a trustful industrial partner and the supplier of ultimate quality products,” says nanoEMI’s CEO Krzysztof Jakubczak.

Read the [original article](#) on Graphene Flagship.