

# About Magnetfab

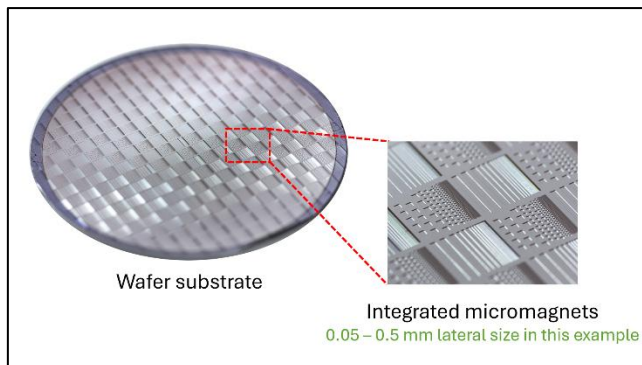
MAGNETFAB: Enabling next-generation microelectronic devices with micromagnets

Magnets are crucial to modern technology, playing a vital role in various industries, including healthcare, robotics, and consumer electronics. Their ability to generate forces, facilitate energy conversion, and enable motion makes them indispensable components in countless devices. While most people don't realize it, smaller magnets are embedded in everyday gadgets like smartphones, smartwatches, and earbuds. In smartphones, for instance, magnets are used in speakers, vibration motors, magnetic sensors, and camera actuators that enable autofocus and optical image stabilization.

However, all of these magnets are millimeter-sized.

Micromagnets - magnets smaller than 1 millimeter - are completely absent from the market today, despite their potential to unlock unprecedented miniaturization. This absence is purely due to the manufacturing limitations of conventional methods for producing magnets at the microscale.

At Magnetfab, we are solving this challenge with a groundbreaking technology for mass-producing **integrated micromagnets** on wafer substrates, using techniques similar to those in semiconductor manufacturing (see figure below). Our micromagnets are typically as small as a grain of sand and can even be made as tiny as a



red blood cell. Moreover, they are crafted from the strongest magnetic material known today - the **neodymium-iron-boron (NdFeB) alloy** - the same material used in over 90% of electric car engines due to its exceptional magnetic properties.

Aiming to become the first **micromagnet foundry** to serve the microelectronics industry, Magnetfab is currently targeting applications such as magnetic sensors, loudspeakers for



earbuds and hearing aids, and quantum computer processors. But this is just the beginning: the potential for innovation with micromagnets is virtually limitless.

Magnetfab was established in April 2024 as a spinoff from the French National Centre for Scientific Research (CNRS) in Grenoble, specifically from the prestigious Institut Néel, known for its leadership in magnetism and materials science. Our core technology is based on over 18 years of research and represents a radical departure from traditional magnet manufacturing methods. Unlike conventional methods based on powder metallurgy and mechanical cutting, our approach employs thin-film deposition to grow thick NdFeB magnetic films directly on wafer substrates. This revolutionary technique leverages the same tools and processes used in semiconductor manufacturing, enabling the large-scale production of integrated micromagnets on wafer substrates for the first time.

Magnetfab is currently hosted at Institut Néel, where we leverage state-of-the-art equipment and cleanroom facilities for R&D and prototyping. This year, we reached several key milestones, including securing €423k in non-dilutive funding and receiving five letters of intent from potential customers and partners, reflecting strong interest in our technology. We are also part of an upcoming Horizon Europe project set to launch in January 2025 and have received multiple requests for prototyping quotes.

As we look ahead to 2025, we are expanding our team and actively recruiting a **Microfabrication Engineer** to drive our growth.

**How many magnets power your everyday electronics?**

		
<b>10-20</b>	<b>3-7</b>	<b>2-4</b>
<b>All of these magnets are millimeter-sized.</b>		

# Job posting at Magnetfab: Microfabrication Engineer

## RESPONSIBILITIES:

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- Develop and optimize processes for micromagnets produced using clean room processing tools and techniques such as thin-film deposition, lithography, wet and dry etching, and annealing.
- Conduct material characterization using techniques such as optical microscopy, SEM, X-ray diffraction, and magnetic characterization.
- Analyze experimental data and prepare comprehensive reports for scientific advisors and management.
- Collaborate closely with scientific advisors to design experiments, troubleshoot process issues, and improve micromagnet fabrication techniques.
- Stay updated on industry trends and advancements in thin-film deposition, MEMS, and sensor technologies.

## CANDIDATE PROFILE:

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- Hands-on experience (ideally several years) in a clean room environment is a must.
- Master's degree (or PhD) in microengineering, physics, material science, or a related field.
- Familiarity with MEMS, sensors and thin-film deposition techniques is highly advantageous. Basic understanding of magnetism is expected.
- Knowledge of programming (e.g. Matlab, Python) and simulation tools (e.g., COMSOL, ANSYS, or other) is a plus.
- Professional working proficiency in both English and French.
- Demonstrate a proactive attitude, strong autonomy, and the ability to take initiative in problem-solving and project management.
- Open and flexible mindset with a positive attitude towards challenges and change.

## WHY JOIN US:

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- Be part of a dynamic startup at the forefront of innovation.
- Collaborate with a highly motivated team to develop revolutionizing technology
- Opportunity for professional growth and advancement within a fast-growing startup.
- Benefit from competitive compensation.

**Join us in transforming microelectronics with the innovative power of micromagnets!**

To apply, please send your CV (including at least 2 references) and a cover letter outlining your qualifications and interest in the position to [info@magnetfab.com](mailto:info@magnetfab.com).