



HighMag Project Launches in Vienna to Develop Next-Generation Magnesium-Based Batteries

Vienna, Austria – May 26, 2025 – The HighMag project, funded under the Horizon Europe programme, was officially launched on May 26th with a Kick-Off Meeting hosted by the **AIT Austrian Institute of Technology**. The project brings together 13 leading partners from across Europe and Israel to develop high-energy, low-cost, and scalable **magnesium-based Generation 5 batteries**.



With the aim to drive the European battery sector toward greater sustainability, security, and strategic autonomy, HighMag will advance a new class of rechargeable magnesium batteries that promise enhanced safety, lower environmental impact, and compatibility with existing lithium-ion manufacturing infrastructure.





A New Chapter in Battery Innovation: HighMag's Mission

Magnesium is a promising alternative to lithium. It's naturally abundant, safe, and cheaper. HighMag's main goal is to create **sustainable and affordable alternatives to today's Li-ion batteries**. We're doing this by developing two advanced **Generation 5 rechargeable magnesium batteries**: one that uses magnesium-sulfur with a conversion cathode, and another with magnesium-metal and an insertion cathode.

To achieve this, HighMag will focus on developing innovative materials and components like better cathodes, anodes, electrolytes, and separators. The project will also use advanced testing and continuous feedback to overcome current challenges with rechargeable magnesium batteries. This will help move these technologies from early development (TRL2) to a more advanced stage (TRL4), with testing and validation at a small pilot scale.

Sustainability and safety are key for HighMag. The project will ensure this by applying **Safe-and-Sustainable-by-Design (SSbD) principles** and making recyclability a top priority. Finally, HighMag is committed to making these batteries easy to manufacture. This includes making sure they're compatible with existing lithium-ion production lines. By providing application analysis and business guidelines, HighMag will set the stage for future scaling and use, ultimately supporting Europe's battery industry.

HighMag is helping drive Europe's Green Transition by supporting the development of advanced battery technologies for electric vehicles and beyond, while boosting innovation across universities, research institutes, and industry.

More about HighMag

- **Project Title:** High-energy, low-cost and scalable generation 5 magnesium-based batteries for mobility applications and beyond
- **Duration:** 2025–2029 (48 months)
- **Coordinator:** AIT Austrian Institute of Technology
- **Funding Programme:** Horizon Europe (HORIZON-CL5-2024-D2-02)





HighMag Consortium Partners

The HighMag project brings together a strong team of experts from leading institutions and companies:

- **AIT Austrian Institute of Technology**, Austria
- **University of Limerick**, Ireland
- **Commissariat a l'Energie Atomique et aux Energies Alternatives**, France
- **Karlsruher Institut fuer Technologie**, Germany
- **Albert-Ludwigs-Universitaet Freiburg**, Germany
- **Amazemet Sp. Z O.O.**, Poland
- **Bar Ilan University**, Israel
- **Zentrum Fur Sonnenenergie- Und Wasserstoff-Forschung Baden-Wuerttemberg**, Germany
- **Danube Cell Manufacturing GmbH**, Austria
- **Imperial College of Science Technology and Medicine**, United Kingdom
- **Lappeenranta-Lahden Teknillinen Yliopisto LUT**, Finland
- **F6S**, Ireland
- **Paul Scherrer Institute**, Switzerland

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