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SPINCELL

SPIN-OFF FELLOWSHIP MEETS EXPEDITION ZUKUNFT (EINREICHFRIST SEPT. 2024)

Projektkurztitel:	**SpinCell**
Projektlangtitel:	**Electro-Acoustic Spinning: A Breakthrough in Single-Cell and Micro-Tissue Analysis**
Antragstellende Organisation:	**Universität für Bodenkultur Wien**
Fellow:	**Dr.in Tayebeh Saghaei, MSc.**
Host:	**Univ.-Prof. Dr. Erik Reimhult**
Projektstandort:	**Wien**
Laufzeit:	**01.04.2025 – 30.09.2026**
Gewählter Schwerpunkt:	**Bahnbrechende Innovationen (Förderung mit Mitteln der Nationalstiftung für Forschung, Technologie und Entwicklung (NATS) aus dem Fonds Zukunft Österreich (FZÖ))**

PROJEKTZIEL:

We have developed electro-acoustic spinning (EAS), a technique that uniquely allows for the analysis of the electro-mechanical properties of individual microtissues, cells, and microorganisms with high throughput. Our primary objective for the spin-off fellowship is to advance EAS (currently at TRL 2-3) to validate critical assumptions regarding its market potential and prospective customer needs, thereby reaching TRL 4-5.

EAS is label-free, requires minimal sample amounts, and can be integrated with other technologies to determine the mechanical and electrical properties of colloidal objects, such as cells. With further development, it could become a highly cost-efficient tool with uniquely high discriminative power for biotechnologists in academia and industry. EAS's ability to characterize many objects within a field of view makes it inherently high-throughput compared to microscopy or other techniques that probe electrical or mechanical properties. We aim to develop its application as a critical tool in academic, testing, and industrial cell culture and tissue culture laboratories, where it will provide critical information that is currently unavailable.

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In the FFG Spin-off Fellowship project, we aim to conclusively demonstrate that EAS addresses the throughput and versatility limitations of current competing techniques while providing unique information and discriminatory power, thereby making the technology ripe for commercialization via a spin-out. We will advance EAS to TRL 4-5, focusing on prototype development and testing applications for different markets. This includes further hardware development to create an easier-to-use, more robust instrument, as well as software development to make data extraction user-friendly and high-throughput. We will also develop software models to interpret the extensive data generated by EAS in applications related to cell and microtissue research.

At SpinCell, we listen to what cells say through their dance and transform movement into medical breakthroughs.

VISION SPIN-OFF:

- Application-level proof-of-technology for electro-acoustic spinning in medicine and industry, validated in early-stage testing.
- Automated cell analyses of >100 cells per minute.
- Patent application(s) submitted to protect our intellectual property (IP) and facilitate commercialization.
- MVP prototype system developed that can showcase core technology capabilities to potential customers and receive their feedback.
- First potential customer and developer partnerships and Memoranda of Understanding (MoU) established to drive early adoption and integration.

Moving forward after the spinoff fellowship:

- Found SpinCell GmbH, backed by a clear investment case and business model.
- Real-world validation, paving the way for commercial scaling.
  Achieve first SpinCell instrument sales, marking market entry and revenue generation.

Weitere **Information zum Spin-off Fellowship** finden Sie auf der FFG-Homepage.

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