

## Industrial Keynote

# GeSiM Bioprinters: Pioneering Additive Manufacturing for Tissue Engineering

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In healthcare and medicine, recognizing the individuality of each patient has led to the rise of patient-specific treatments, a trend that is increasingly important in modern medicine. As personalized care gains prominence, the demand for innovative technologies to fulfill these requirements has arisen. Enter additive manufacturing (AM)—a promising solution that holds immense potential [1].

This presentation aims to highlight the key features of our innovative technology, set to redefine the 3D printing industry. GeSiM bioprinters, known for their versatility and precision, cater to a wide range of biofabrication needs. We plan to share some of our customers' success stories that demonstrate the diverse applications of our bioprinters, from tissue engineering and biopolymers to sensors, and even the printing of electronics for soft robotics and wearable electronics.

Our GeSiM bioprinters, especially the BS5.x series, excel in 3D printing with a variety of materials. They can process CAD data to create multi-layer models and can be equipped with a comprehensive range of tools. These include double-syringe and pneumatic extruders, high-temperature extruders, mixers for syringe extruders, FDM heads, microdroplet dispensers, µg powder dispensers, UV-pens, plasma pens, cameras, MEW platforms, and the option to develop new tools for specific applications upon customer request. The high XYZ accuracy of our bioprinters ensures superior resolution, distinguishing them from many competitors.

In addition to our proprietary tools, GeSiM instruments can be adapted to include third-party modules. Flexibility and customization are at the heart of GeSiM bioprinters, ensuring adaptability to unique printing requirements and allowing users to tailor the technology to their specific needs. This adaptability underscores our commitment to advancing personalized healthcare.

### AUTHOR'S STATEMENT

Conflict of interest: Authors are employees of GeSiM mbH, Germany. Animal models: No animal experiments were carried out. Informed consent: Informed consent has been obtained from all individuals included in this study. Ethical approval: The research related to human use complies with all the relevant national regulations, institutional policies and was performed in accordance with the tenets of the Helsinki Declaration and has been approved by the authors' institutional review board or equivalent committee.

Acknowledgments: The authors state no funding involved.

### REFERENCES

[1] GeSiM, *Tissue engineering with combination of FDM and MEW*, GeSiM Bioinstruments and Microfluidics. Available at: <https://gesim-bioinstruments-microfluidics.com/combination-of-fdm-and-mew/> (2024).