

Small things, big impacts

Citation for published version (APA):

Sahin, G. (2024). *Small things, big impacts: guiding cell fate through next-generation microengineered systems*. [Doctoral Thesis, Maastricht University]. Maastricht University. <https://doi.org/10.26481/dis.20241007gs>

Document status and date:

Published: 01/01/2024

DOI:

[10.26481/dis.20241007gs](https://doi.org/10.26481/dis.20241007gs)

Document Version:

Publisher's PDF, also known as Version of record

Please check the document version of this publication:

- A submitted manuscript is the version of the article upon submission and before peer-review. There can be important differences between the submitted version and the official published version of record. People interested in the research are advised to contact the author for the final version of the publication, or visit the DOI to the publisher's website.
- The final author version and the galley proof are versions of the publication after peer review.
- The final published version features the final layout of the paper including the volume, issue and page numbers.

[Link to publication](#)

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal.

If the publication is distributed under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license above, please follow below link for the End User Agreement:

www.umlib.nl/taverne-license

Take down policy

If you believe that this document breaches copyright please contact us at:

repository@maastrichtuniversity.nl

providing details and we will investigate your claim.

Propositions

Accompanying the dissertation

Small things, big impacts: guiding cell fate through next-generation microengineered systems

by **Gözde Şahin**

7th October 2024, Maastricht

- 1) It is a great challenge to fabricate technically robust microengineered systems with certain complexity to mimic native tissue microenvironment. (*This thesis*)
- 2) A reductionist approach is a sensible strategy for designing cell culture platforms. (*This thesis*)
- 3) The synergy of imprinting and electrospinning ensures the consistent (re-) production of fiber textures for high-throughput studies. (*This thesis*)
- 4) Complementary materials and fabrication techniques have the potential to unlock next-generation microengineered systems, offering more distinct and relevant cues for organoids. (*This thesis*)
- 5) Traditional cell culture platforms have advanced our understanding of fundamental cell functions. Now, microengineered systems offer powerful tools for exploring the principles governing complex tissue and organ development.
- 6) The widespread adoption of microengineered systems depends on both the quality and quantity of biological data.
- 7) “The question of the level of complexity remains, that is, how simplistic is complex enough.” (*Moritz Hofer & Matthias P. Lutolf*)
- 8) “We are now at a tipping point in this field, with the possibility of seeing real reductions in the use of animals and the application of more effective approaches for drug development and personalized medicine as well as basic research in the near future.” (*Donald E. Ingber*)
- 9) “A journey of a thousand miles begins with a single step.” (*Lao Tzu*)