

ERC Starting Grant ARTIST for Seraphine Wegner at the Max Planck Institute for Polymer Research

27.09.2017, 13:00 | Wissenschaft, Forschung, Bildung

Pressemitteilung von: *Max-Planck-Institut für Polymerforschung*

Presseagentur: *Max-Planck-Institut für Polymerforschung*



Dr. Seraphine Wegner (© MPI-P)

The European Research Council (ERC) awarded Dr. Seraphine Wegner at the Max Planck Institute for Polymer Research (MPI-P) an ERC Starting Grant of 1.9 million euros for her project ARTIST. This project on bottom-up tissue engineering wants to control cell-cell interactions with visible light to assemble cells into functional tissues.

The bottom-up self-assembly of a tissue from cellular building blocks is the ultimate goal in tissue engineering. “If our approach ARTIST is successful, it will provide new ways of studying cell-cell interactions and assembling cells into tissues,” emphasizes Seraphine Wegner and continues: “The dynamic and asymmetric structures that we will create in our project with unmatched flexibility should give rise to functional tissues.”

In general, a tissue is built from different cells that form multicellular architectures and work together. Nature assembles tissues reproducibly and produces complex tissues. This happens by generating interactions between cells of different types from the bottom-up. In tissue engineering it does not suffice to simply mix together the right composition of cells to successfully build-up a functional multicellular tissue. Instead, the correct structural organization of the cellular building blocks must be ensured. The challenge is to accurately control when and where cells interact with each other to assemble them into the desired structure so that they can function as a tissue.

In ARTIST, controlling specific cell-cell interactions with visible light allows Wegner to precisely generate these interactions only when the light is on and only in locations where light shines through a mask. In order to mediate cell-cell-interactions, proteins that respond to visible light will be used. The cell-cell interactions, which will be developed in ARTIST, provide high spatial and temporal control and the visible light used to induce them does not affect other processes in the cell. The aim is to generate complex tissues like structures which resemble the ones observed in real tissues.

Prof. Paul Blom, Managing Director of the MPI-P, says: “The ERC Starting Grant is a great honor for Seraphine Wegner and recognition of her innovative ideas.” The ERC Starting Grants are destined to promote independent research of top scientists in Europe at the beginning of their scientific career by giving them the opportunity to lead an ambitious research project with their own team for five years.

About Seraphine Wegner:

Since 2016, Dr. Seraphine Wegner has been leading at the Max Planck Institute for Polymer Research the independent MaxSynBio research group on light-controlled systems, which is funded by the German Federal Ministry of Education and Research (BMBF). Wegner studied chemistry at the Middle East Technical University (METU) in Ankara, Turkey, and obtained her PhD in 2010 at the University of Chicago, USA, focusing on metal ion sensors for in vivo imaging using metalloregulatory proteins. After that, she worked as a postdoctoral researcher at the University of Heidelberg and at the Max Planck Institute for Intelligent Systems, Stuttgart, where she developed various surface functionalization techniques and protein immobilization techniques to study cell-material interaction.

For further information about Dr. Seraphine Wegner and MaxSynBio please visit:

http://www.mpip-mainz.mpg.de/4436512/MaxSynBio_Research_Group_Wegner

About the Max Planck Institute for Polymer Research (MPI-P):

The Max Planck Institute for Polymer Research (MPI-P) ranks among the top research centers in the field of polymer science worldwide. The focus on soft materials and macro-molecular materials has resulted in the worldwide unique position of the Max Planck Institute for Polymer Research and its research focus. The institute combines all the necessary specialized expertise - from the creative design of new materials, from their synthesis in the lab to their physical characterization as well as the theoretical understanding of polymer characteristics.

The institute was founded in 1983. More than 500 international people are working at the MPI-P.

For further information please visit: <http://www.mpip-mainz.mpg.de>

Scientific Contact:

Dr. Seraphine Wegner

Max Planck Institute for Polymer Research

Ackermannweg 10

55128 Mainz, Germany

Phone: +49-6131-379135

Email: wegners@mpip-mainz.mpg.de

Quelle: idw

Portrait

-

News-ID: 971101 • Views: 329 (Stand: 07.10.2026)

Link zur Pressemitteilung:

<https://www.openpr.de/news/971101/ERC-Starting-Grant-ARTIST-for-Seraphine-Wegner-at-the-Max-Planck-Institute-for-Polymer-Research.html>