



Palacký University  
Olomouc



**CATRIN**  
Czech Advanced  
Technology and Research  
Institute



**ACCELERATOR**

# ERA Chairs: ACCELERATOR

Andrea Nogová

Head of Grant office  
CATRIN UP



The Czech Advanced Technology and Research Institute (CATRIN) commits to the development of new **technologies for clean energy and sustainable environment**, thus promoting **health and well-being of the society**.



**Science is  
in our DNA**



# CATRIN RESEARCH DIVISIONS



**Nanotechnologies**



**Biotechnologies**



**Biomedicine**

## ACCELERATOR: Basic features

- ERA Chair for Accelerated Synthetic Chemistry Technologies at Palacký University Olomouc (101087318)
- Coordinator: **Ass. Prof. Pavel Banáš**, General director
- ERA Chair: **Prof. Alexander Dömling**
- Duration: 01/02/2023 – 31/01/2028
- Total cost: € 2 499 062,50
- [CORDIS link](#)



**BUT HOW IT ALL STARTED?**





## Characterization of Biostimulant Mode of Action Using Novel Multi-Trait High-Throughput Screening of *Arabidopsis* Germination and Rosette Growth

Lydia Ugena<sup>1†</sup>, Adéla Hýlová<sup>1†</sup>, Kateřina Podlešáková<sup>1</sup>, Jan F. Humplík<sup>1,2</sup>, Karel Doležal<sup>1</sup>, Nuria De Diego<sup>1\*</sup> and Lukáš Spíchal<sup>1</sup>

<sup>1</sup> Department of Chemical Biology and Genetics, Centre of the Region Haná for Biotechnological and Agricultural Research, Faculty of Science, Palacký University, Olomouc, Czechia, <sup>2</sup> Laboratory of Growth Regulators, Centre of the Region Haná for Biotechnological and Agricultural Research, Institute of Experimental Botany, Czech Academy of Sciences, Olomouc, Czechia

## An Automated Method for High-Throughput Screening of *Arabidopsis* Rosette Growth in Multi-Well Plates and Its Validation in Stress Conditions

Nuria De Diego<sup>1</sup>, Tomáš Fůrst<sup>1</sup>, Jan F. Humplík<sup>1,2</sup>, Lydia Ugena<sup>1</sup>, Kateřina Podlešáková<sup>1</sup> and Lukáš Spíchal<sup>1\*</sup>

<sup>1</sup> Department of Chemical Biology and Genetics, Centre of the Region Haná for Biotechnological and Agricultural Research, Faculty of Science, Palacký University, Olomouc, Czechia, <sup>2</sup> Laboratory of Growth Regulators, Centre of the Region Haná for Biotechnological and Agricultural Research, Institute of Experimental Botany, Czech Academy of Sciences, Olomouc, Czechia



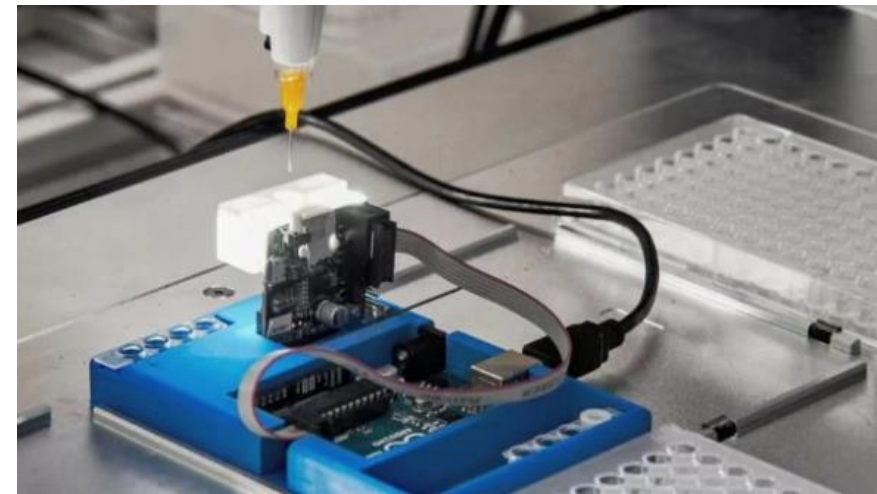
Dr. Lukáš Spíchal,  
Head of Phenotyping group  
CEO at AgroBioChem s.r.o.



Prof. Dömling was searching for the Lab that would be able to provide a **high-throughput screening at the whole plant level**, ideally experienced in **valorization** of research results.

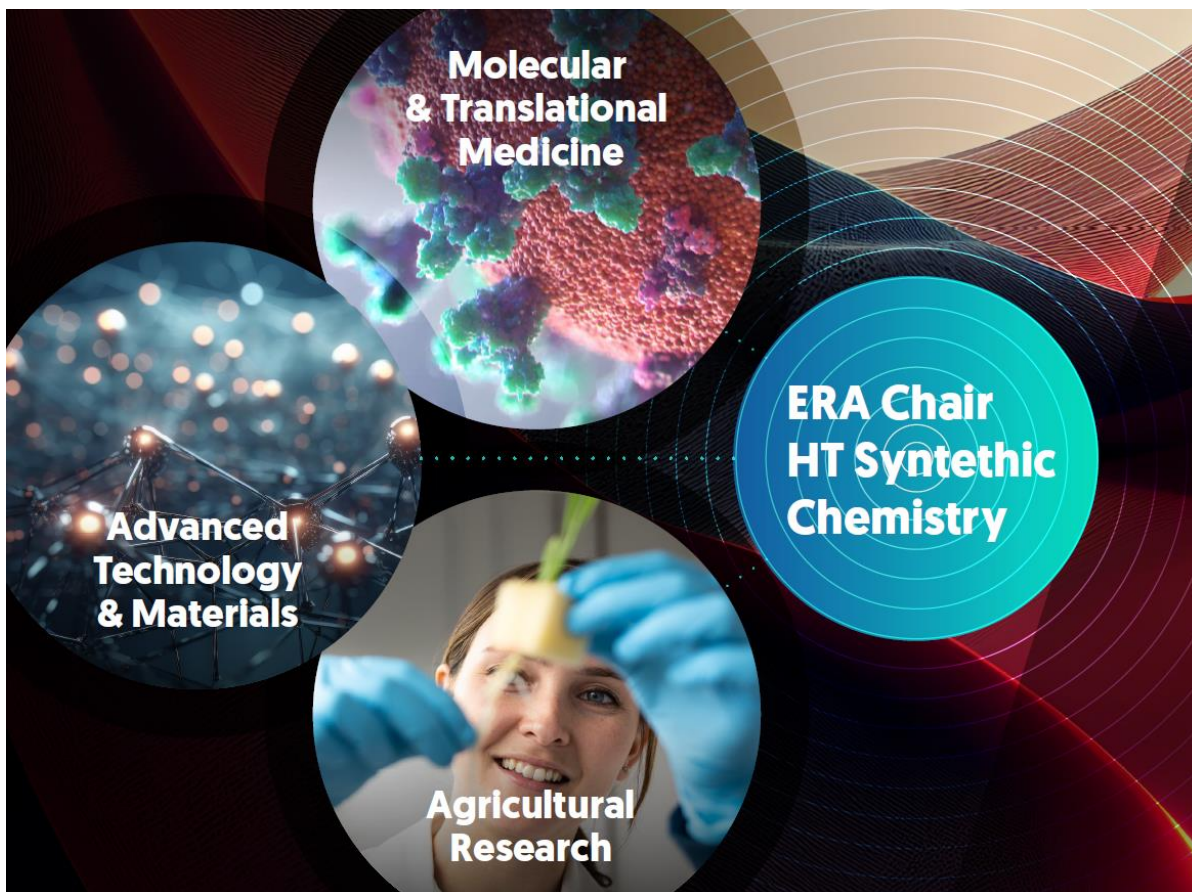
## WHAT HAPPENED NEXT?

- 2019 – Prof. Dömling visited Phenotyping group
- 2019 – 2021 – Searching for the ways, how to collaborate (Covid-19)
- 12/2021 – Prof. Dömling came with the idea to apply for ERA Chairs with newly established CATRIN institute → Meeting with Directors and Rector
- 03/2022 - Application submitted (HORIZON-WIDERA-2022-TALENTS-01)
- 07/2022 – Positive evaluations (14.50)
- 10/2022 – GA signed
- 02/2023 – ACCELERATOR project was launched





## MAIN CHALLENGES DURING PREPARATION

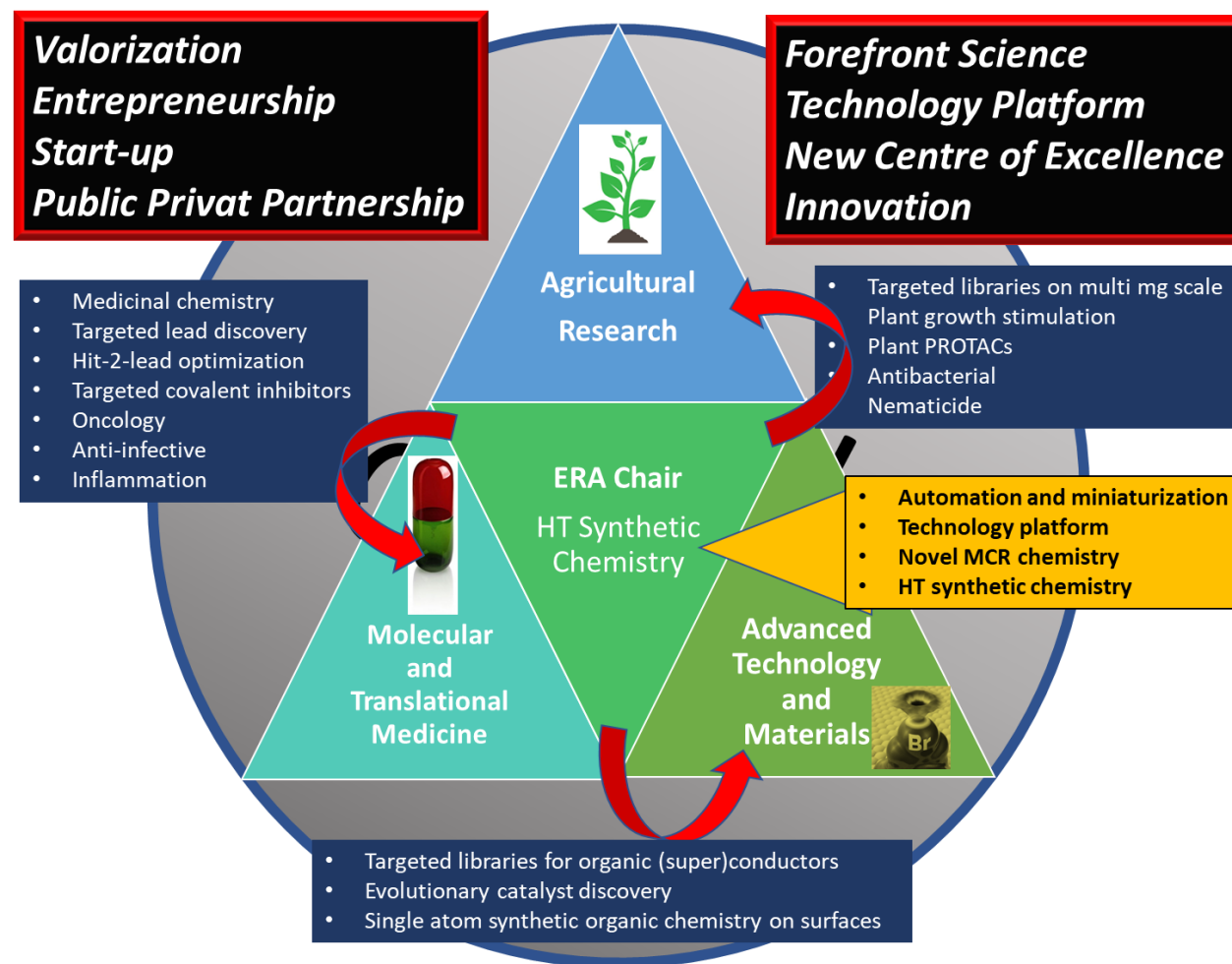


- Develop a strong scientific strategy that will build on ERA Chair's and CATRIN's strengths
- Accelerating synthetic chemistry for sustainability: unleashing the power of automation and miniaturization to reduce costs, energy consumption, and environmental footprint.
- The ACCELERATOR project pioneers cutting-edge approaches, interconnecting nanotechnology, plant research, and biomedicine for transformative breakthroughs.

## AUTOMATION + MINIATURIZATION = ACCELERATION

### ERA Chair Core Technology: An Automated High Throughput Chemistry Platform

- Project ACCELERATOR will develop a fast and efficient partially automated **synthesis technology platform** suited to optimize compound properties in an (semi)automated, miniaturized and accelerated fashion using artificial intelligence.
- The technology platform will be applied in **medicinal chemistry, plant enhancement biology and nano material discovery**, the three CATRIN departments.





## MAIN CHALLENGES DURING PREPARATION

- To understand the conditions on ERA Chair's working arrangements given by the call
  - *The ERA Chair holders might move on a temporary or permanent basis to the coordinator's premises. To this end, secondments or any other legal arrangements (e.g., leave without pay, sabbatical licences) are possible including part-time work and multiple stays.*
  - *To ensure the sustainability of the action, the ERA Chair research team should have conditions to thrive after the end of the Horizon Europe funding. This should be clearly demonstrated in the proposal and include the appointment of the leader of the newly created research group on a permanent basis within the coordinator organisation (to which the ERA Chair holder might apply) during the initial 3 years of the duration of the grant.*
  - *Luckily, prof. Dömling has just finished the third decade of his career in Netherlands (after USA and Germany) and wanted to move on for „the last season“*

## MAIN CHALLENGES DURING PREPARATION

- Research costs up to 10% of the EU contribution
  - There are tremendous research and equipment costs in the field of synthetic chemistry
  - ERC Advanced (will start in January 2024)
- To decide whether we should include in-kind contributions in the project budget



## TIPS FOR APPLICANTS

- It is beneficial to have an experience with **smaller CSA projects** (Twining)
- Build the project around your institutional **STRATEGY**



CATRIN becoming a pocket of excellence in Innovation & Knowledge Transfer Ecosystem

## TIPS FOR APPLICANTS

- It is beneficial to have an experience with smaller CSA projects (Twining)
- Build the project around your institutional **STRATEGY**
- Describe openly your strengths and, especially, **WEAKNESSES** – what is it that hold you back?
- Find a **HIGH QUALITY CANDIDATE** that brings the expected **ADDED VALUE**:
  - *The scientific excellence of the ERA chair holder in miniaturisation, automation of synthetic chemistry and multicomponent reaction chemistry is very clearly demonstrated. **Experience and expertise in attracting research funding and participating in technology transfer activities** are of particular merit in this respect. The means by which the proposed research group will be established and operated is very well described. The necessary infrastructure for their envisaged activities is also clearly available. These are excellent elements of the proposal.*
  - *The soundness of the methodology is convincingly demonstrated. The proposed coordination and support actions are comprehensive, excellent and well presented through a SWOT analysis. For example, **institutional weakness in commercialising research outputs is fully recognised and will clearly be addressed through the proposed ERA chair's experience** as well as plans to improve and intensify contacts with industry. Links with other research groups in the host institution are very well considered. This is excellent.*



## ANY QUESTIONS?

**Andrea Nogová**

Head of Grant office

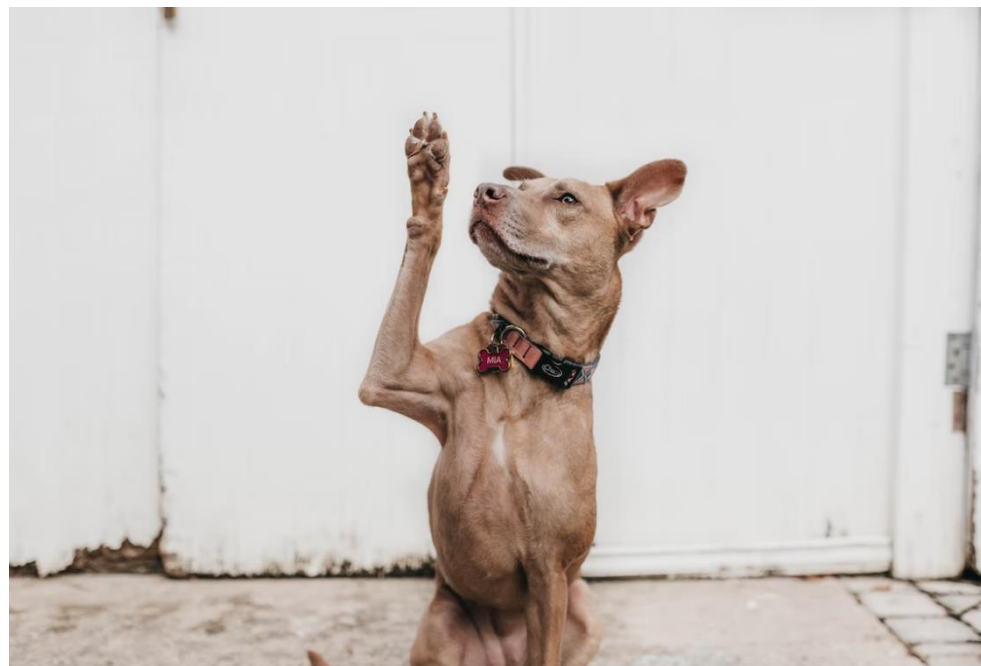
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