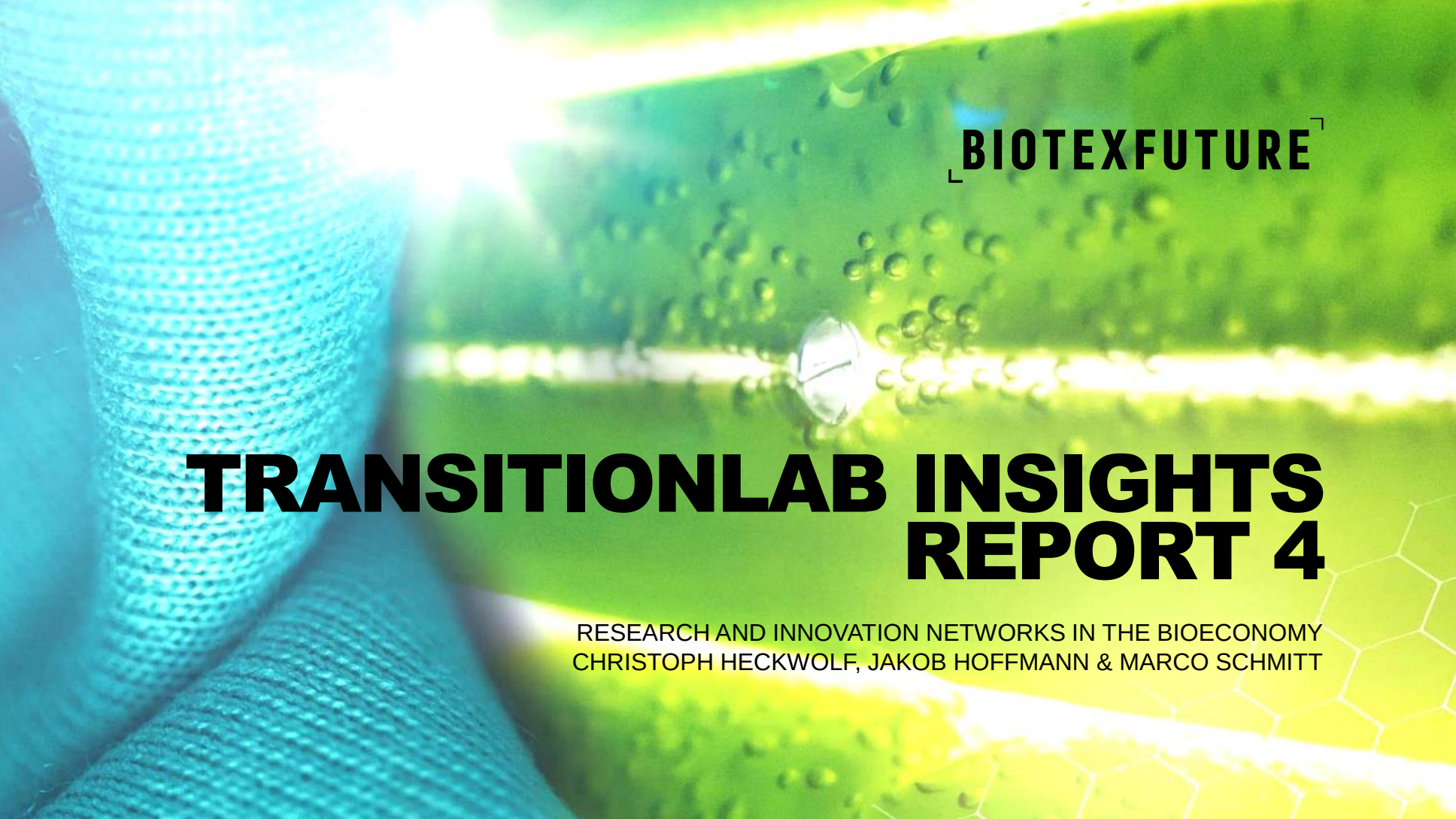


BIOTEXFUTURE

TRANSITIONLAB INSIGHTS REPORT 4

RESEARCH AND INNOVATION NETWORKS IN THE BIOECONOMY

CHRISTOPH HECKWOLF, JAKOB HOFFMANN & MARCO SCHMITT

TRANSITIONLAB INSIGHTS
ABOUT THIS SERIES

TRANSITIONLAB INSIGHTS SERIES

TODAY

Dr. Marco Schmitt

Post-Doc at RWTH Aachen University
Chair of Sociology of Technology and Organization (STO)

In BIOTEXFUTURE:

TransitionLab – Project Lead
PMO – Team Member

Christoph Heckwolf

Researcher at RWTH Aachen University
Chair of Sociology of Technology and Organization (STO)

In BIOTEXFUTURE:

TransitionLab – Team Member

Jakob Hoffman

Researcher at University Heidelberg
Chair of Economic and Social Geography

In BIOTEXFUTURE:

TransitionLab – Team Member

ABOUT OUR APPROACH

Data Sources:
BUND research data base, CORDIS, DFG research data base, Lens patent data base, Web of Science, and Nexus

Limitations:
- Missing data
- Differences between data sources
- Selection bias

Network Analysis Basics:
- Nodes and Edges
- Two-Mode and one-mode networks
- Centralities
- Attributes

Explorative Approach:
- Using the networks to interact with the experts
- Explore topics and questions
- Open the data for BIOTEXFUTURE

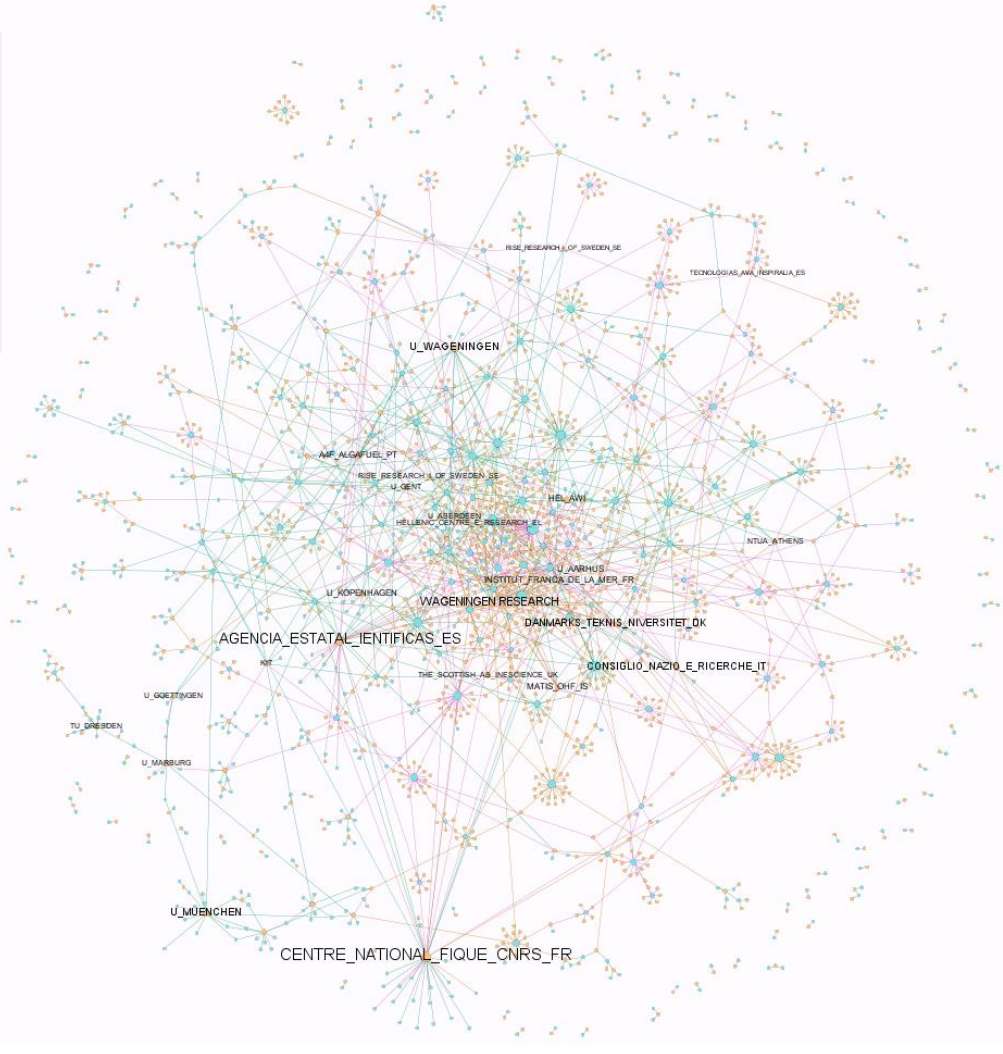
GLOBAL PERSPECTIVE ON R&D CONCERNING ALGAE

Two-Mode-Network

1489 Organisations

636 Projects

2010 – 2020



TIE COLOR REFERS TO TYPE OF ALGAE

ALGAE = 36,77%

MICRO-ALGAE = 39,29%

MACRO-ALGAE = 20,94%

MICRO- AND MACRO-ALGAE = 3%

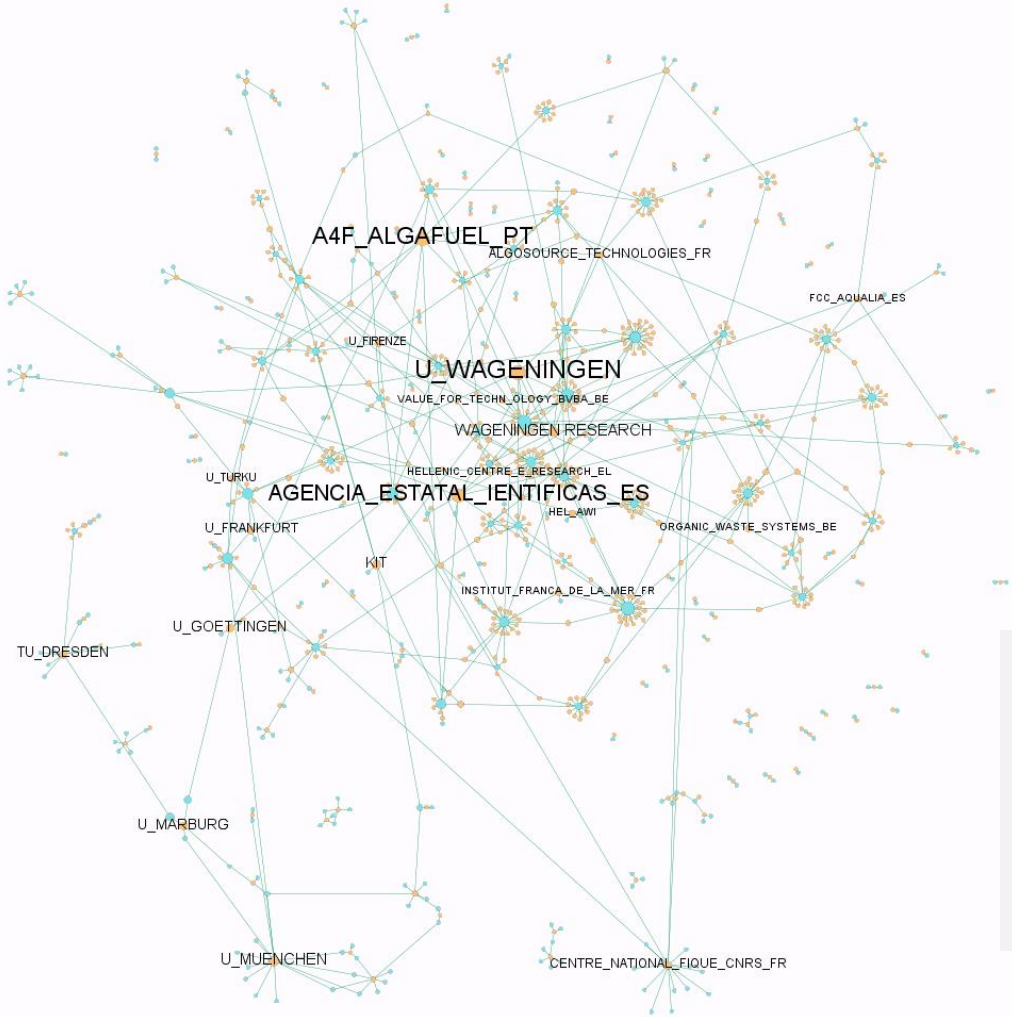
PERSPECTIVE ON R&D CONCERNING MICRO-ALGAE

Two-Mode-Network

649 Organisations

288 Projects

2010 – 2020



Nodes

Blue = Projects

Orange = Organisations

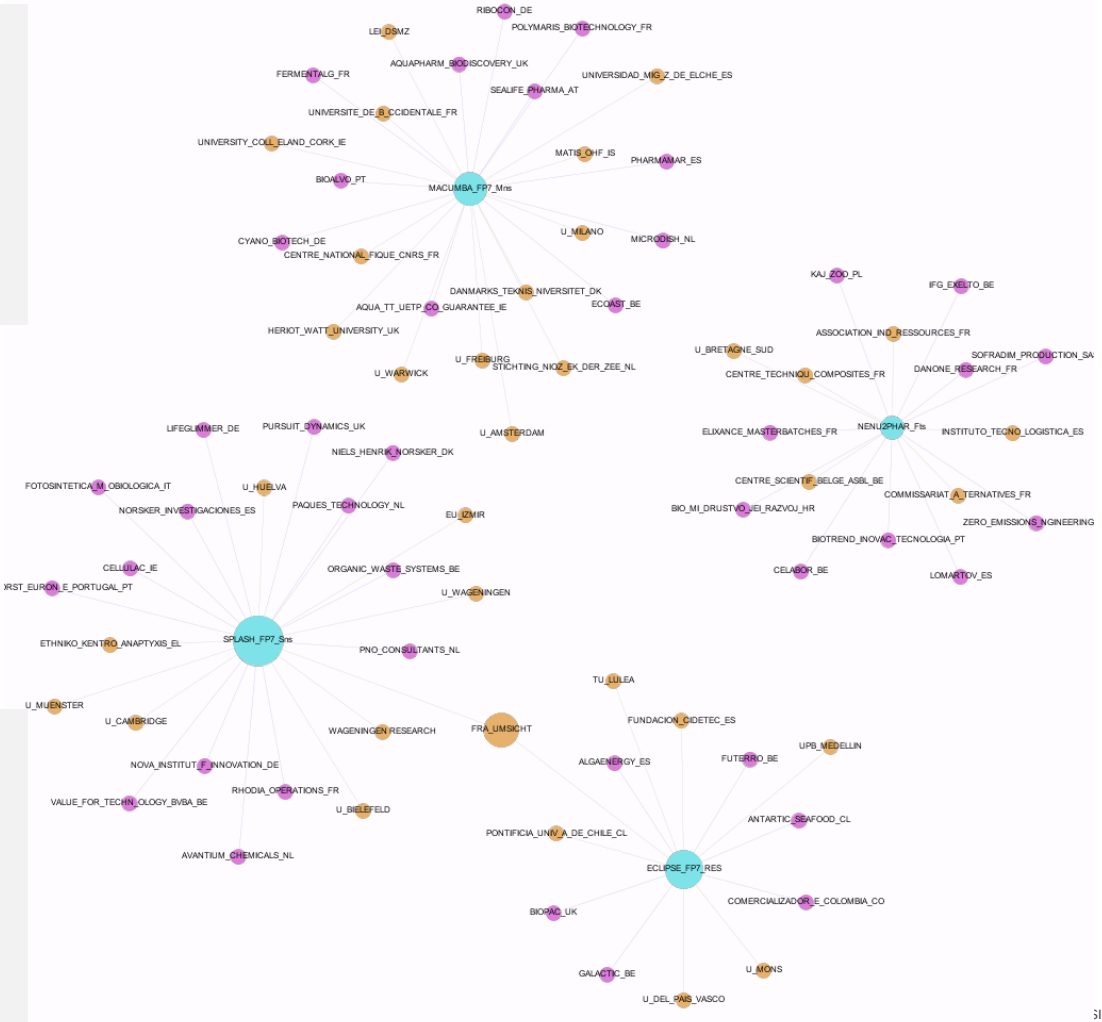
BETWEENNESS CENTRALITY

Measures the number of times a node lies on the shortest path between other nodes.

Labels of the organisations with the highest betweenness centrality are shown

DEEP DIVE ON R&D PROJECTS

that use micro-algae as feedstock for biorefinery or bioreactor technologies to produce specific polymers (PLA; PHA ;PEF)



Nodes

Blue = Projects

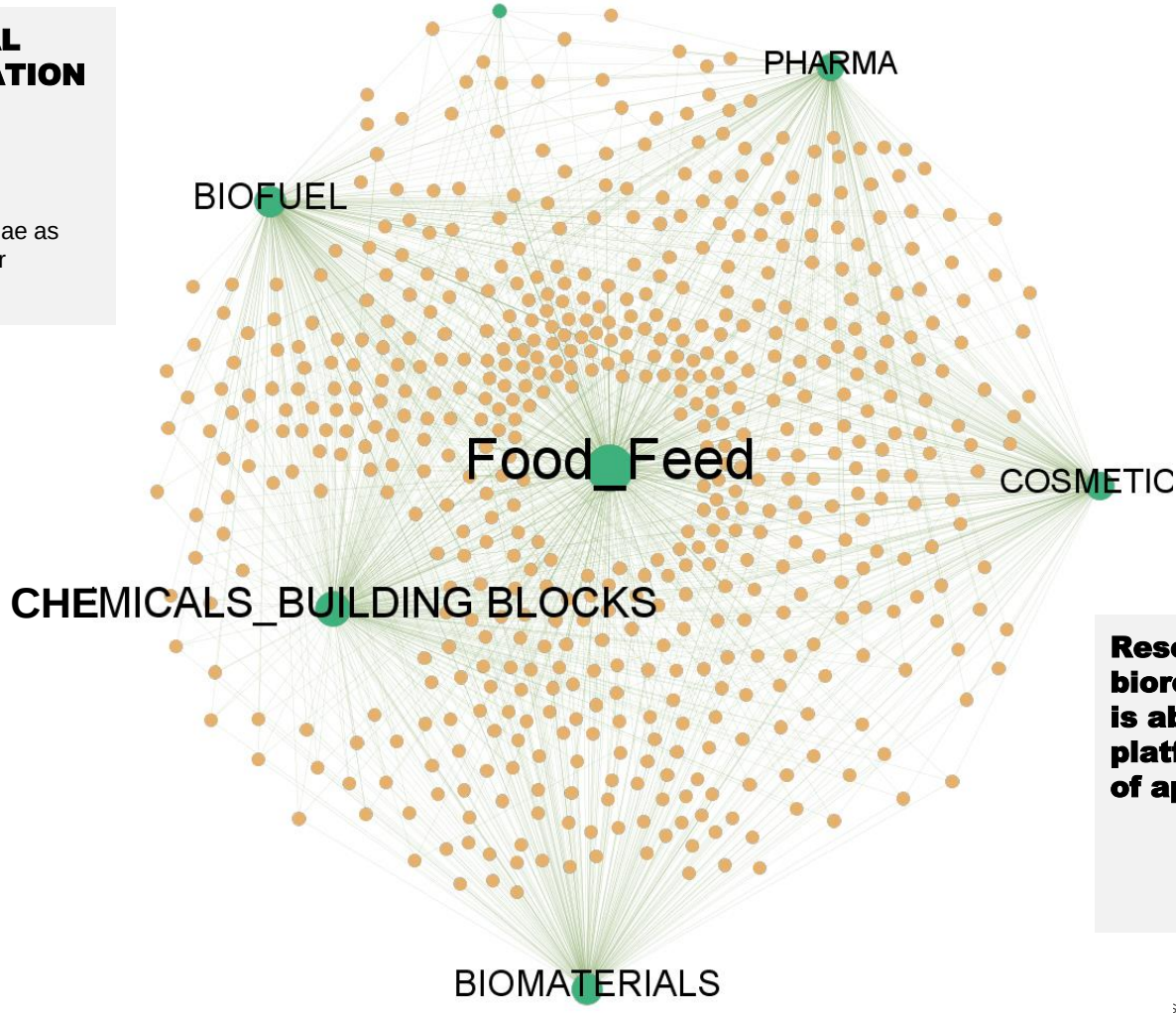
Purple = Companies

Orange = Research Organisation

ORGANISATIONAL TIES TO APPLICATION FIELDS

Two-Mode-Network of organisations and topics

Organisations that use algae as feedstock for biorefinery or bioreactor technologies.

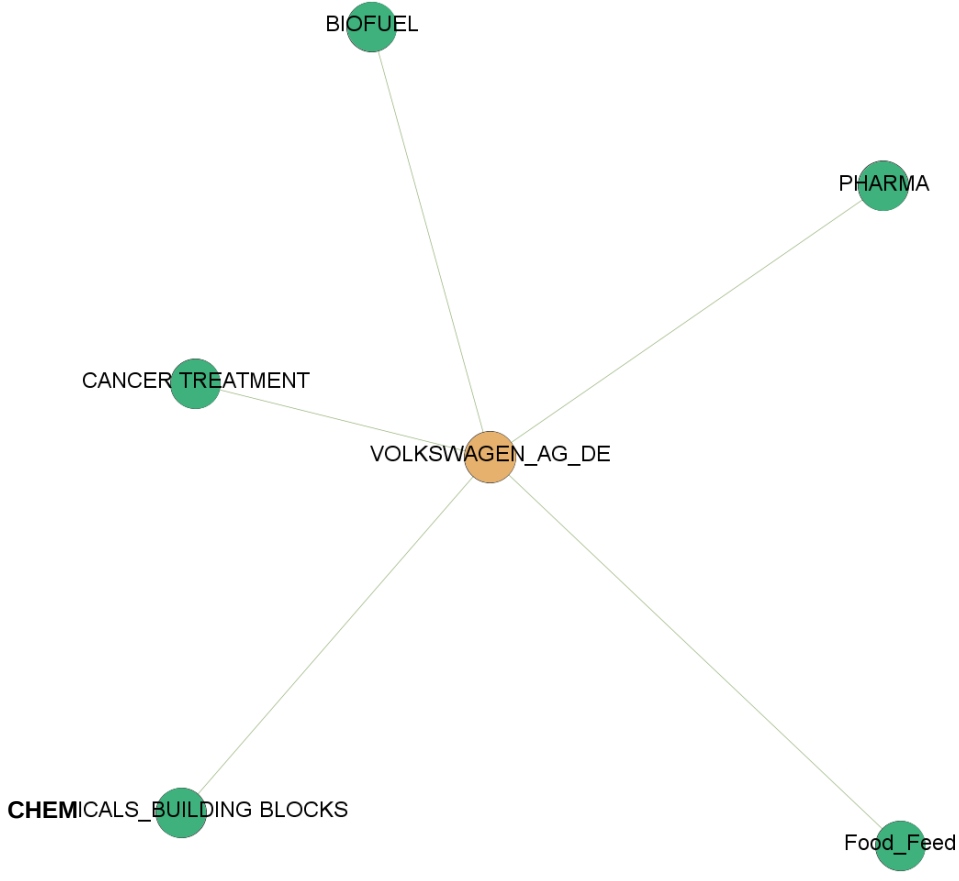


Research field of algae biorefinery technology is about establishing a platform for a variety of applications.

VOLKSWAGENS TIES TO CANCER TREATMENT

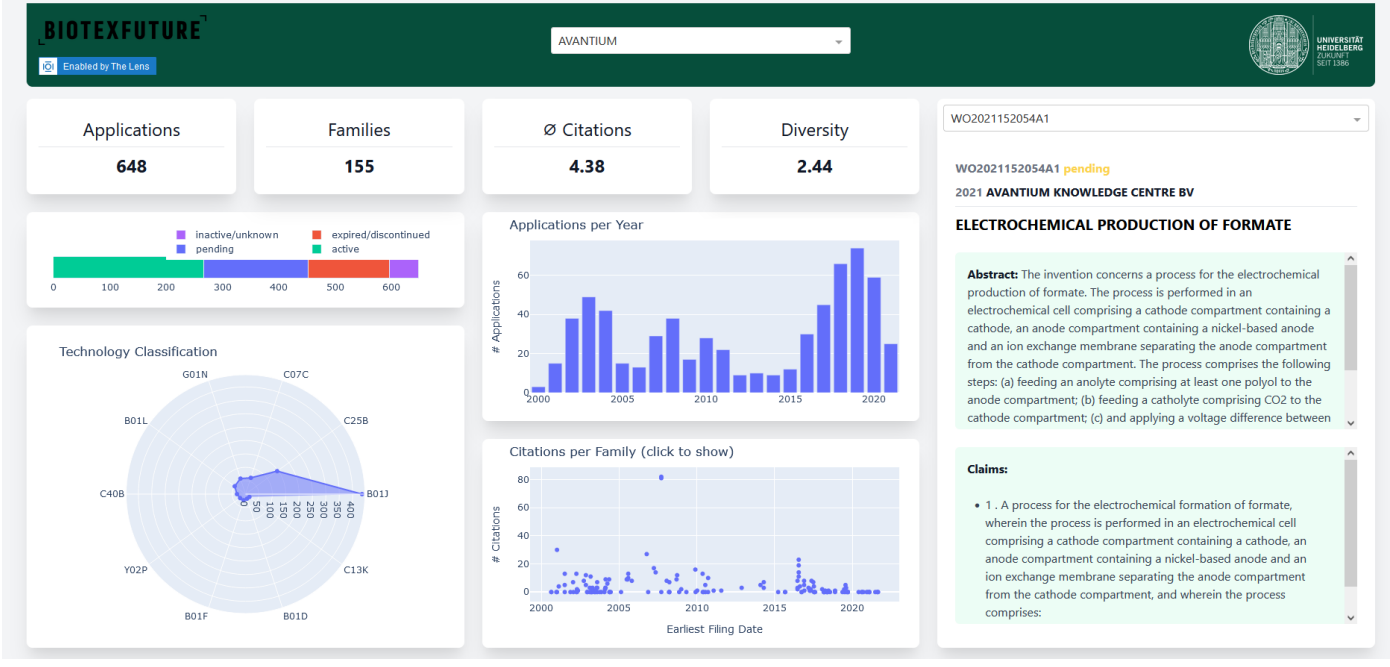
Testing microalgae strains for the production of biofuel

Developed micro-algae derived component for cancer drug.

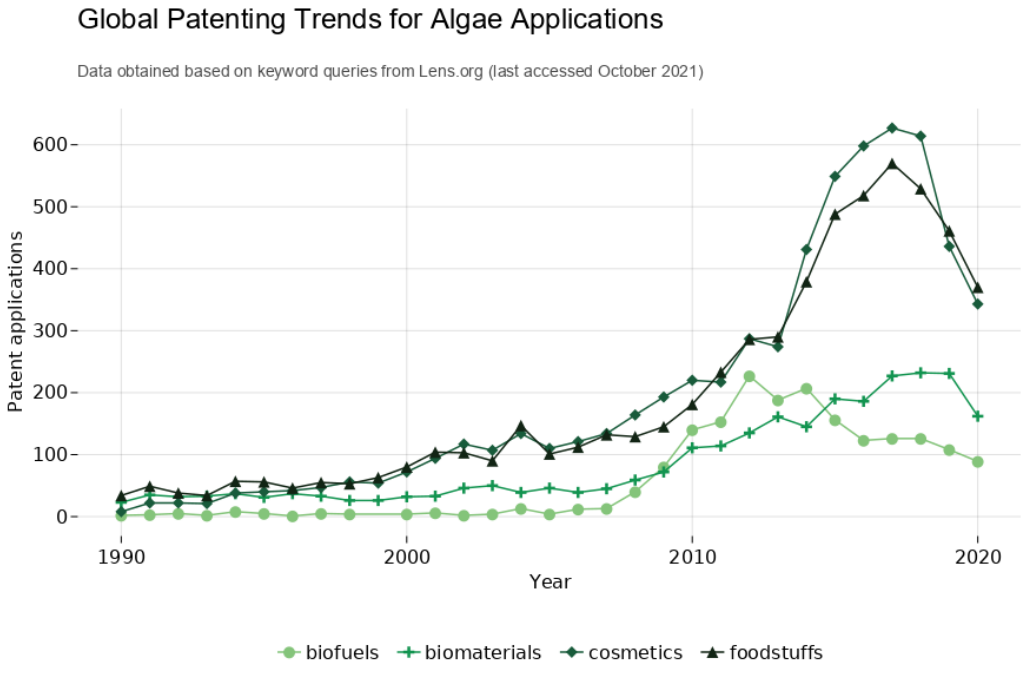


BIOTEXFUTURE

www.biotexfuture-tetra.de



OUTLOOK FOR PATENT ANALYTICS IN BIOTEXFUTURE



What else can we do?

- **Field-level** landscaping analysis
- Include **scientific development**

What should we focus on?

- What topics / organizations are of interest for **BIOTEXFUTURE**?
- What kind of metrics / insights are you interested in?
- We would like to take your opinion into account!

EXECUTIVE SUMMARY

BIOTEXFUTURE

RESULTS

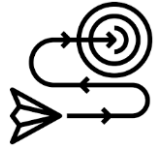
Research and patent data give you important insights on technological trends through resource allocation over time

IMPLICATIONS

Use our data to find out research fields that are growing and learn about their direction

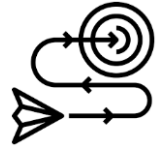
Network data shows promising partners involved in co-developing technologies

Find organizations that give you access to research fields connected to your own



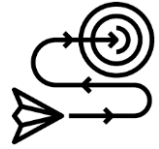
Network data shows bridging technologies, that are used in multiple lines of research

Identify technologies that could impact your own lines of research or your own product development



Use Case: Research on Algae is distributed over a variety of fields more or less interconnected and with a low TR-Level

Look out for developments in other application fields and for possible contributions from your research for these fields



Combining network views and expert views enhances both approaches

We want you to engage with the dashboard to find answers to your questions and to add important selection criteria for further research

THREE KEY TAKEAWAYS

BIOTEXFUTURE

Networks help to identify key actors or missing links in research and technology

Data exploration with experts is key to get the most out of rich network information

Try out the dashboard and get in contact with us!