



Technische  
Universität  
Braunschweig

**BLB** BATTERY  
LABFACTORY  
BRAUNSCHWEIG

EINE EINRICHTUNG IM **NFF**



**ProZell**

Kompetenzcluster  
zur Batteriezellproduktion



## ProZell competence cluster for cell production and pilot lines in Germany

Arno Kwade, Speaker of the ProZell Cluster  
Battery LabFactory, TU Braunschweig

# Competence Cluster for Battery Cell Production (ProZell)

## Aims

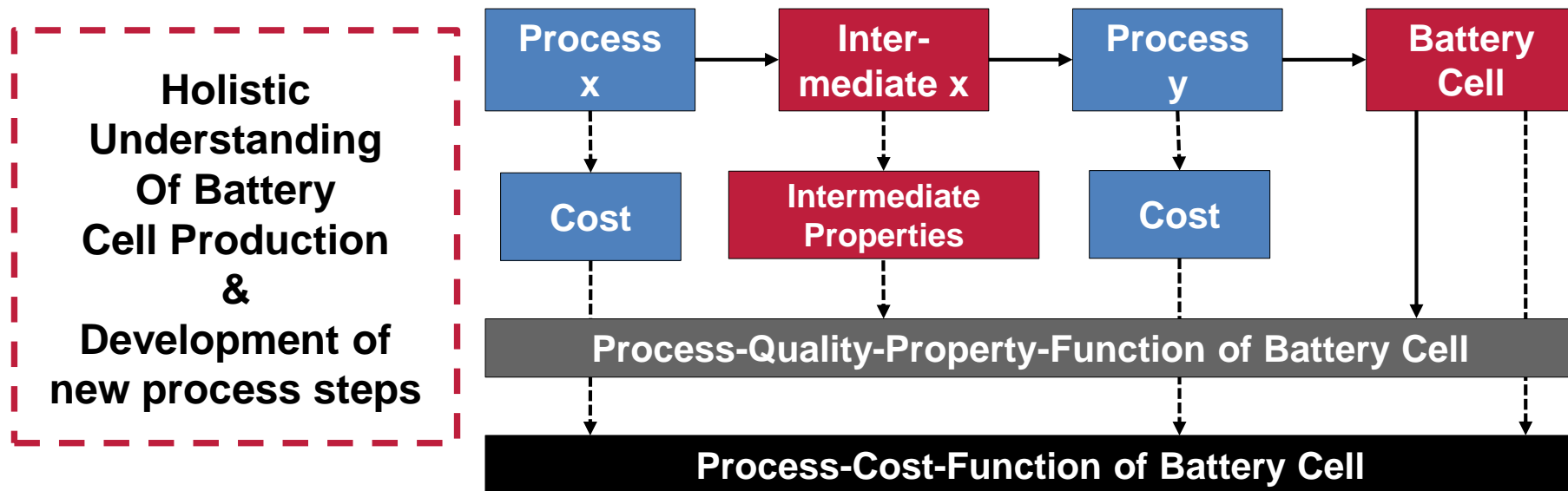
### Superior Aim:

Long-term, holistic and profound **knowledge basis** for erection and sustainable further development of an **international competitive battery cell production in Europe/Germany** by integration of **material science, chemical and mechanical engineering**

supported by

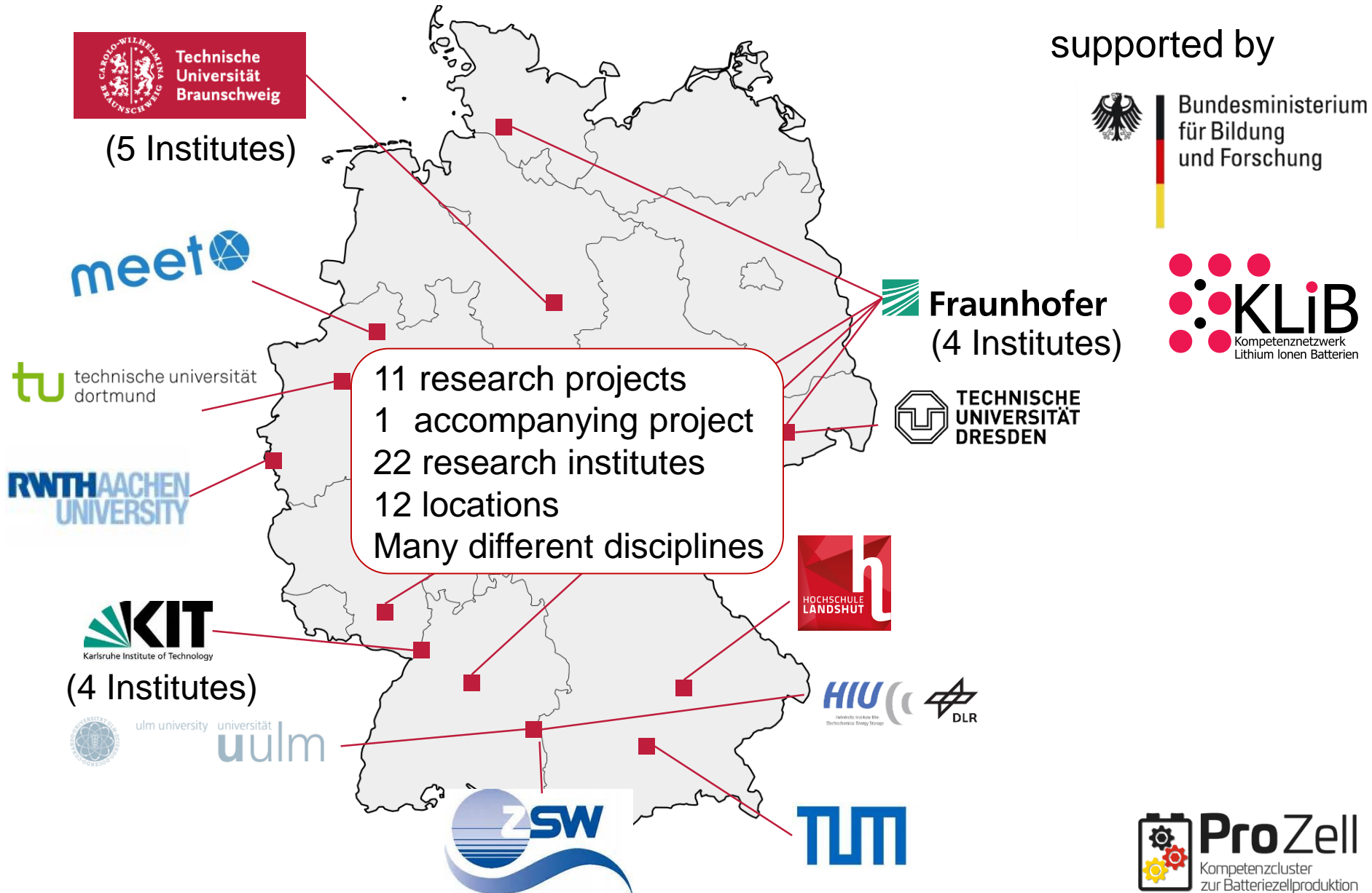


Bundesministerium  
für Bildung  
und Forschung



# Competence Cluster for Battery Cell Production (ProZell)

## Members from Chemistry, Chemical and Mechanical Engineering



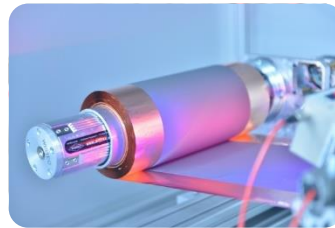
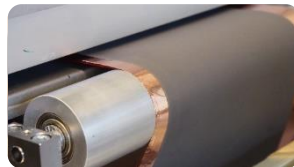
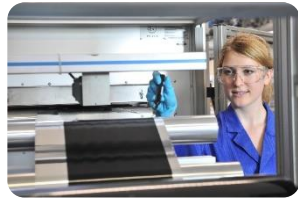
# Research Aims of ProZell Projects

with specific focus on one particular process step

**Roll-it** – R2R intensive drying

**LoCoTroP** – low-cost dry coating

**Cell-Fi** – process optimization for efficient electrolyte filling



Coating

Dry Coating

Drying

Electrolyte Filling

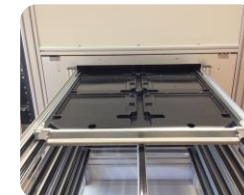
Dispersing

Drying

Calendering

Assembling

Formation



**OptiZellForm** – energetic optimization of formation

**KonSuhl** – continuous slurry processing

**ProKal** – modelling the calendering process

**MultiDis** – multiscale simulation of slurry processing

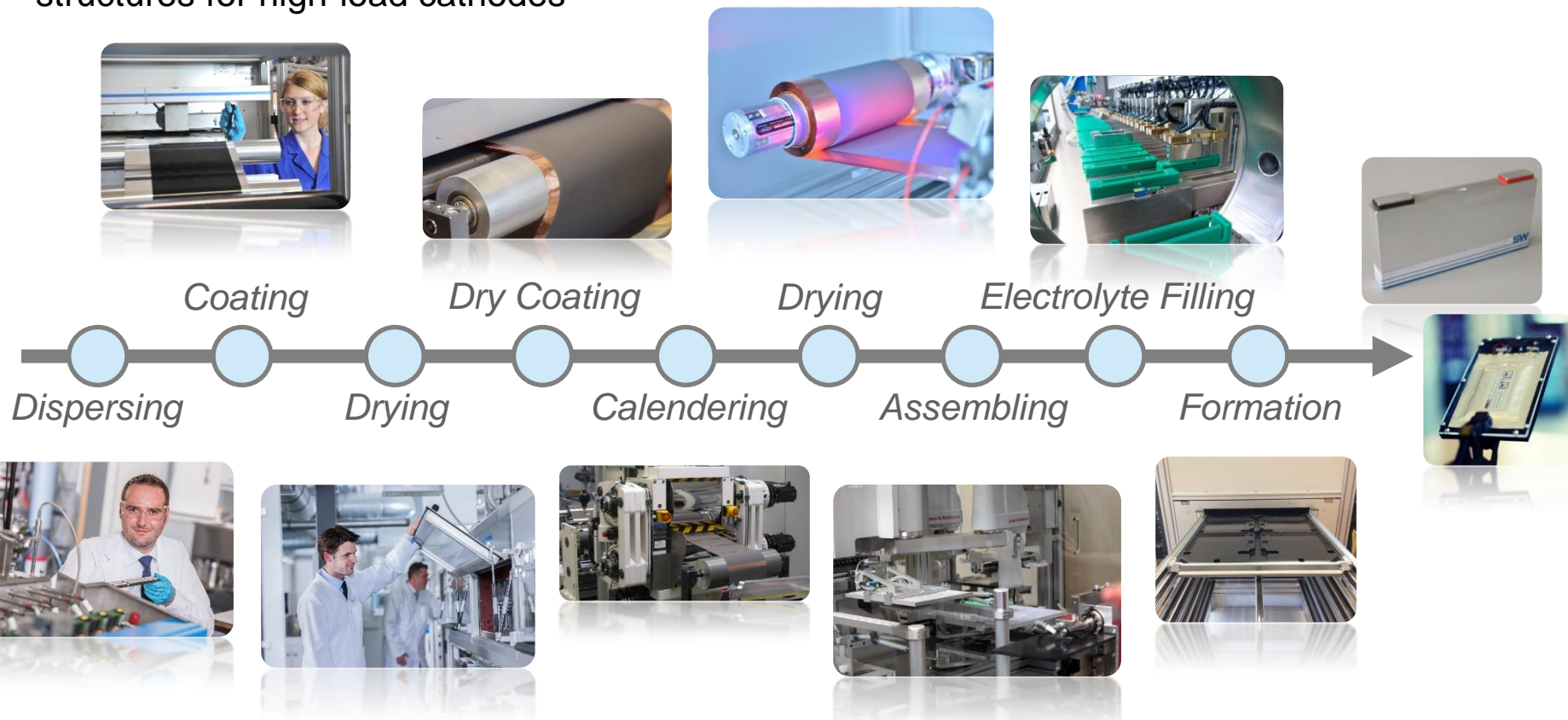


# Research Aims of ProZell Projects

with a more holistic view on the manufacturing

**HiLo** – processes and electrode structures for high-load cathodes

**QS-Zell** – QA methods in the production of large-format LIB-cells

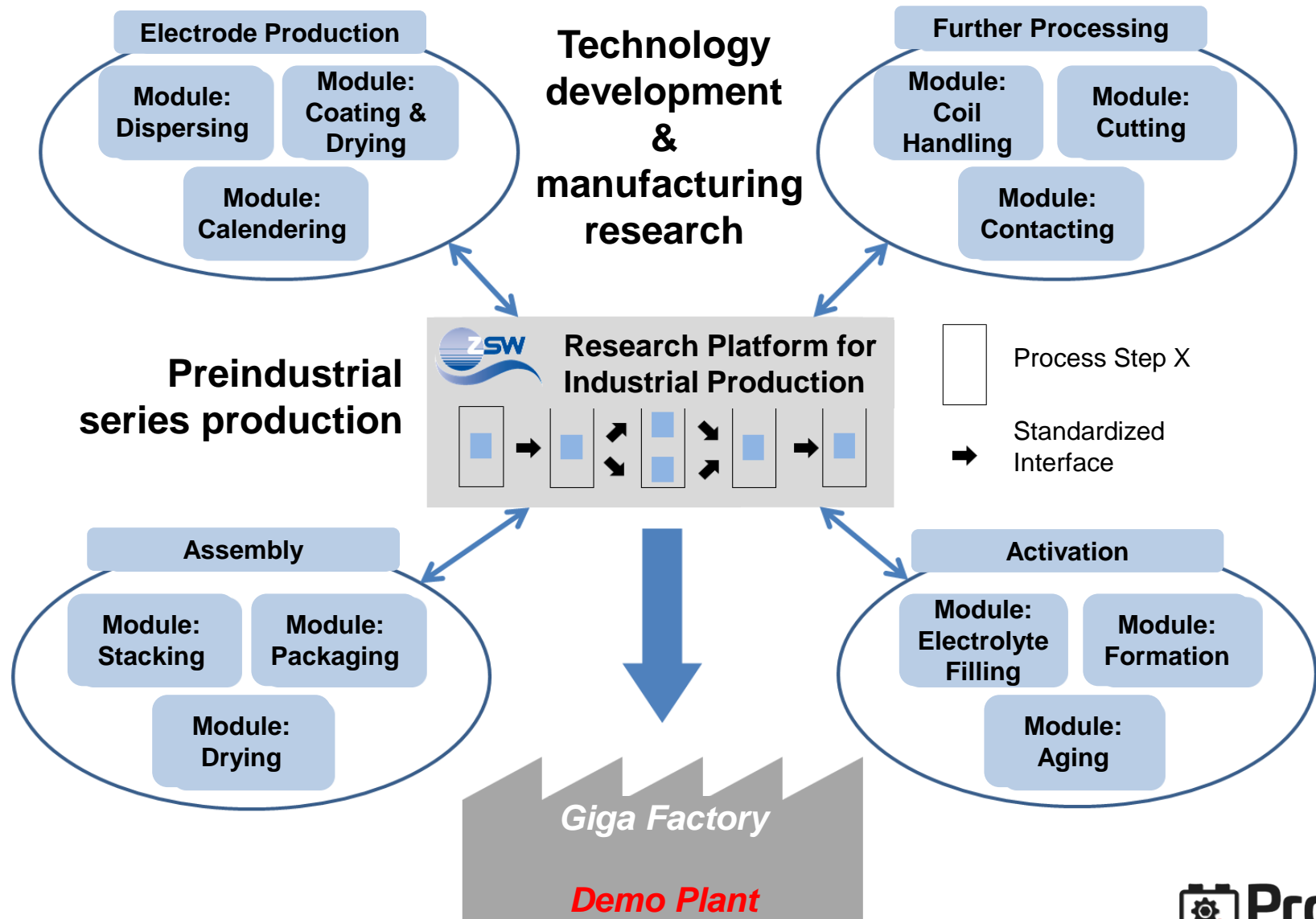


**HighEnergy** – high-capacity structured electrodes

**Sim2Pro** – multi-level simulation of process-product-interactions

# Competence Cluster for Battery Cell Production (ProZell)

## Networking with Industry



# Conclusions and outlook

- Key for international competitive battery production is
  - integration of different competencies in research & development (especially from electrochemistry, material science, chemical, industrial and electric engineering)
  - Deep knowledge of each process step for achieving maximum cell performance at minimized costs
  - New process developments with own IP

## Outlook

- Special database as knowledge fund for industry
- Simulation and modelling tools for process and product design
- **Extension of existing pilot lines or building of new pilot lines for future battery generations (already started)**