



Welcome to the 1st iBAT Conference



Berner
Fachhochschule



Prof. Dr. Andrea Vezzini
BFH

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Swiss innovations for **B**attery
Applications and **T**echnologies

Program points

- **Presentation iBAT Association** – *Andrea Vezzini*
 - Introduction of the iBAT association. Aims of the association and the network. Opportunities that open up for iBAT members thanks to the network. Goals and roadmap.
- **Presentation of current research projects and topics** – *C. Brivio, Ch. Ochsenbein, M. Sattler, P. Caliandro*
 - Research topics and actual scientific projects of the centers BFH, CSEM, Ökozentrum and Switzerland Innovation Park Biel/Bienne
- **Presentation of the industrial network "Kompetenznetzwerk Lithium-Ionen-Batterien" (KLiB) from Germany** – *Dr. Michael Krausa*
 - KLiB is a German network for all aspects of lithium ion batteries. Introduction of the network and the planned online event, "German-Swiss Industrial Dialogue", which is organised jointly with iBAT.
- **Design Thinking Approach** – *Emmanuelle Reuter*
 - iBAT will use methods such as Design Thinking to find radically new solutions for electrochemical storage systems and their applications. Introduction to these methods.
- **Programm 2021** – *Andreas Hutter*
 - Outlook on the program and the next action steps for 2020.



iBAT Association

Ensures the competitiveness of the Swiss Industry
in the field of Battery Applications & Technologies

THE ASSOCIATION

Our Mission

Batteries are the key enabler for emission-free mobility, renewable based energy systems, advanced robotics and mobile medical equipment. The iBAT association represents industry, authorities and research institutions along the complete value chain from manufacturing to recycling and strengthens Switzerland's competitiveness in this core technology.

Why the need for an Association

- The innosuisse SCCER program (2014-2020) expires at the end of this year. Three of the SCCER's (FURIES, HaE and Mobility) have currently their own platform for the knowledge and technology transfer in the field of electrochemical storage
- Successor funding programs such as SWEET tend to promote systemic research and don't address technical energy storage research questions in the same way as the SCCER's
- Other organizations are more directed towards policy makers and support the implementation of Switzerland's climate policy goals and the Energy Strategy 2050

The iBAT association wants to close the emerging gap between science, economy and authorities around the topic of battery applications and technologies and offers its members a platform for networking, knowledge exchange and innovation promotion

iBAT Core Activities

The purpose of iBAT is to support Swiss industry in the field of Battery Applications & Technologies in ensuring and improving its competitiveness by

- providing a comprehensive problem-solving competency for the complete production chain,
- establishing and pursuing partnerships and consortium creation for ideas conception,
- enabling the realization of associated development projects through the collaboration with Swiss research institutes,
- organizing symposiums and workshops,
- developing technical and marketing information on battery industry in Switzerland,
- representing the interests of the iBAT community on a national and international basis.

Research Partners

They shape iBAT: leading Swiss research partners that drive innovation. Research partners are full members of the iBAT Association.



BFH – Battery and Storage Systems Lab

The BFH Energy Storage Research Centre provides a unique source of technical and commercial expertise. It serves as a subject-matter expert on storage applications in the energy and mobility sector and works with its partners to generate impetus for developments.



CSEM – Battery Systems

CSEM is a Swiss research and technology organization (RTO) with +35 years of technology development and transfer to industry. This activity has accelerated innovation, particularly in the strategic fields of digitalization, precision manufacturing, and sustainable energy.



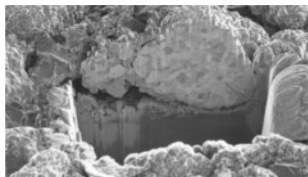
Empa – Laboratory Materials for Energy Conversion

Empa is an interdisciplinary research institute of the ETH Domain, conducting cutting-edge research on materials science and technology for the benefit of industry and the well-being of society. The laboratory Materials for Energy Conversion focuses on materials and device innovation for sustainable energy conversion and storage technologies.



UniNE – Institute of Management

The chair for innovation management at the University of Neuchâtel's Institute of Management has expertise in the collaboration between research and industry partners in the fields of strategy and innovation.



Empa – Reliability Center

The Reliability Center operates a knowledge and equipment pool to perform research, tests and inspections for industry, academic institutions and public authorities.



EPFL – Distributed Electrical Systems Laboratory

The research activities of the Distributed Electrical Systems Laboratory (DESL) refer to the development of smart grid concept solutions in order to efficiently deliver sustainable, economic and secure electricity supply.



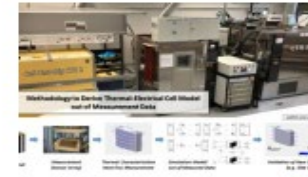
ETHZ – High Power Electronic Systems Lab

The research at the High Power Electronic Systems Lab (HPE) focusses generally on the design, modelling, and optimization of high power converter systems required for example in future energy distribution systems for integrating renewable energy sources or in electric mobility applications.



Ökozentrum

Ökozentrum develops functional models in the field of electromobility, stationary battery storage, accumulator systems and PV for customers from industry and research. We support you from the vision to small product series.



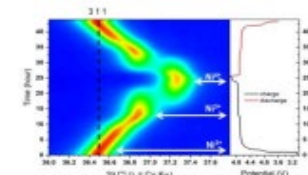
OST – Battery Research & E-Mobility

The Battery Research & E-Mobility Group of OST (Eastern Switzerland University of Applied Sciences - formerly NTB) is working in the field of electro mobility, battery research and charging technology since 2007.



OST – Power Electronics Laboratory

The Power Electronics Laboratory at the OST was established in 2008 and offers comprehensive expertise in the field of switched mode power conversion. One of the focuses is placed on battery charging for electro mobility and stationary applications.



PSI – Electrochemistry Laboratory

The Electrochemistry Laboratory (ECL), established 1988, is part of the Energy and Environment Research Division at the Paul Scherrer Institute. PSI's Electrochemistry Laboratory is Switzerland's largest Center for Electrochemical Research.



SIPBB – Swiss Battery Technology Center

The Switzerland Innovation Park Biel/Bienne (SIPBB) supports start-ups in the development of marketable products. The Swiss Battery Technology Center brings a unique mix of experts from research and development.

iBAT: an association independent from any leading house research institution

- iBAT is a non-profit making association (Verein) in the meaning of articles 60 to 79 of the Swiss Civil Code. This Association is an independent legal entity with legal capacity. It is governed by Swiss law.
- iBAT is not exclusive
 - iBAT is open to all academic and research institutions active in the field of Battery Applications & Technologies to become **full member** of iBAT.
 - Every natural or legal person that shares the general objectives of iBAT and wishes to support and/or participate in the events organized by IBAT in the field of Battery Applications & Technologies and/or to benefit from the services offered by the Association can become **associate members**
- iBAT is organized in a simple and democratic way: A governing body with the General Assembly and an executive body with the Executive Committee and the Management Office

iBAT Organization

- Associate members may elect two delegates as a representatives

Associate Members

- Each Full member has one vote at the General Assembly

Full Members

General Assembly

Executive Committee

Management Office

- to adopt and amend the bylaws;
- elect and dismiss the members of the Executive Committee
- approve the engagement of the audit firm

- Develop an annual program and budget
- Day-to-day management decisions, not directly handled by the Managing Director
- Establishment of working groups and sub-committees

- executes the decisions of the General Assembly and the Executive Committee
- represent the Association vis-à-vis third parties
- administer the affairs of the Association

Vote of President, Vice-President and members of the executive office

Each member of the Executive Committee shall serve for a two-year term following his/her election, such term ending on the day of the respective ordinary General Assembly.

The Founding members have approved the composition of the initial Executive Committee for a term ending on the day of the ordinary General Assembly for 2022 as follows:

- President: Prof. Dr. Andrea Vezzini (BFH)
- Vice-President: Dr. Andreas Hutter (CSEM)
- Executive Committee member: Mr Christian Ochsenbein (SIPBB)



Prof. Dr. Andrea Vezzini (BFH)



Dr. Andreas Hutter (CSEM)

Management Office

- iBAT runs a management office under the supervision of the Executive Committee to deal with all administrative and organizational duties, to bring the right partners in a common project together and to organize networking events. The seat of the management office is at the SIPBB



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iBAT Association

c/o Switzerland Innovation Park Biel/Bienne AG

Aarbergstrasse 46, 2503 Biel/Bienne, Switzerland



iBAT.swiss – a TFV - Networking Events Series supported by innosuisse 2021-2024



Supported by:



Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Confederation

Innosuisse – Swiss Innovation Agency

innosuisse has granted iBAT 140'000.- CHF for the organization of a event series called iBAT.swiss over the next 4 years (2021-2024).

As usual with innosuisse grants, iBAT commits itself to an own contribution of 50%.

iBAT.swiss promotes matchmaking and facilitates interdisciplinary exchange on battery topics between the key stakeholders from industry, authorities and science. The focus of the event series is on technical progress and practical applications of batteries with the objective to learn together and to boost radical innovations and products.

KLiB German – Swiss Industry Dialogue

German-Swiss Industry Dialogue on Battery

- Date: 9th December 2020
- Venue: online
- Aims, B2B, Partnering, discussion of possible cooperation
- Format presentation of enterprises and possibly of existing consortia
enterprises along the whole battery value chain
common invitation KliB and iBAT



Dr. Michael Krausa
Geschäftsführer



iBAT web-site: www.ibat.swiss

Research Partners

Network Partners

Events

Press



Home

Overview, Mission & Infos at a glance

Association

Organization, Partners, Bylaws

News

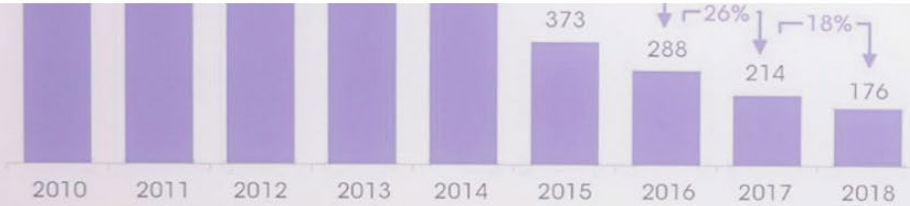
Lab Updates, Press & interesting Events

Contact

Get in Touch with the iBAT Association

Join us

Become a member & drive technology forward



Berner Fachhochschule | Haute école spécialisée bernoise | Bern University of Applied Sciences

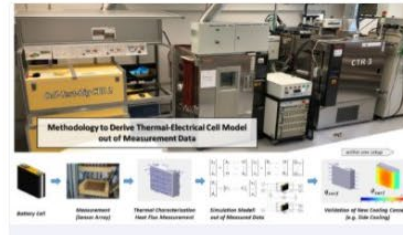


News

News about the commitment of Swiss Labs, press releases and exciting events.



SIPBB – Swiss Battery Technology Center



Become a member

- free membership 2021 if you subscribe before end of 2020
- The membership fees for Associate Members are set as follows:
 - Micro and Small Enterprises (companies with 0-49 employees): 500 CHF/year
 - Medium-sized companies (companies with 50-249 employees): 1000 CHF/year
 - Large companies (companies with over 250 employees): 2000 CHF/year
- <https://ibat.swiss/become-a-member/>

Membership request

First name*	Last name*
<input type="text"/>	<input type="text"/>
Your organization	Your function*
<input type="text"/>	<input type="text"/>
E-Mail*	Phone
<input type="text"/>	<input type="text"/>

Your message or questions

Is there any question you would like to ask us?

Your organizations description

Please use max. 1'500 characters

Your organizations logo

PNG, JPG, JPEG, EPS, PDF - max. 10 mb. With the transfer you agree that we may publish your logo on our website for the member overview.

No file chosen

I understand the conditions concerning the membership fees. No membership fees will be charged to companies joining the association before 31.12.2020 and regular membership fees will then only start as of 01.01.2022. The membership fees for Associate Members are set as follows:

- Micro and Small Enterprises (companies with 0-49 employees): 500 CHF/year
- Medium-sized companies (companies with 50-249 employees): 1000 CHF/year
- Large companies (companies with over 250 employees): 2000 CHF/year

Accept that iBAT will use the data transmitted by me in order to process my request. The sent data will be processed only for the purpose of answering your request. You can find further information in our privacy policy.



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Thank you!

Presentation of current research projects and topics



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Generate research investment from abroad



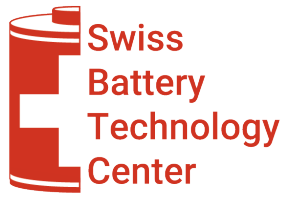
Promote Swiss innovation performance



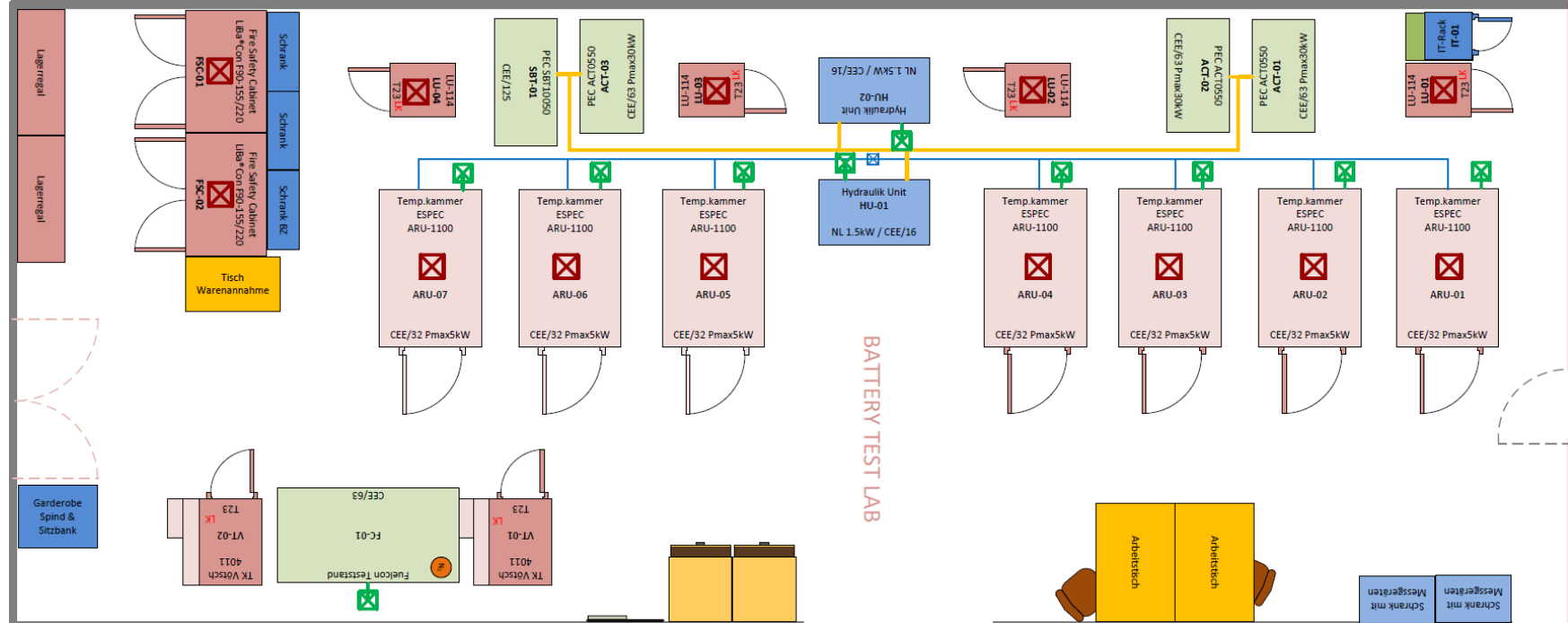
Accelerate the implementation of research results
into marketable products



Support start-ups



powered by
SWITZERLAND INNOVATION
PARK BIEL/BIENNE



- Shared infrastructure BFH, CSEM, SIPBB
- Lab opening in Q2/2021
- 127 cell test channels
- 15 module test channels
- 13 Safety test chambers



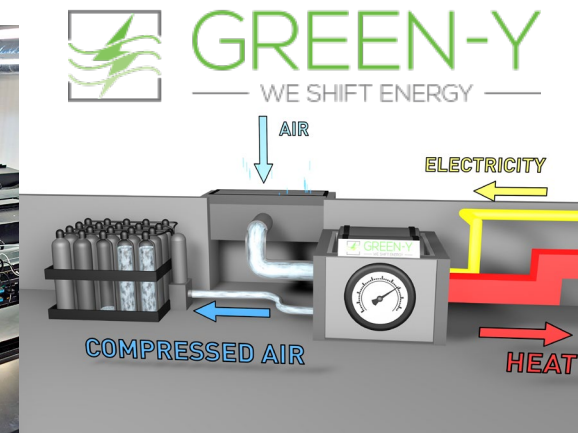
Focus areas

- ☐ Battery and application integration
- ☐ Prototyping of new batteries
- ☐ Industrialization support
 - Engineering Team:
 - mechanical design, simulation, chemistry
 - systems engineering, electrical design
 - firmware, software, AI and machine learning
- ☐ Battery Recycling
 - Focus on De-Manufacturing
 - In collaboration with the Swiss Smart Factory

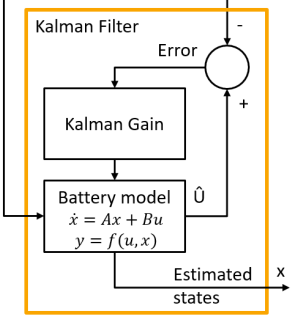
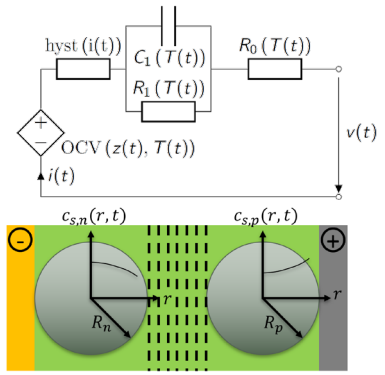
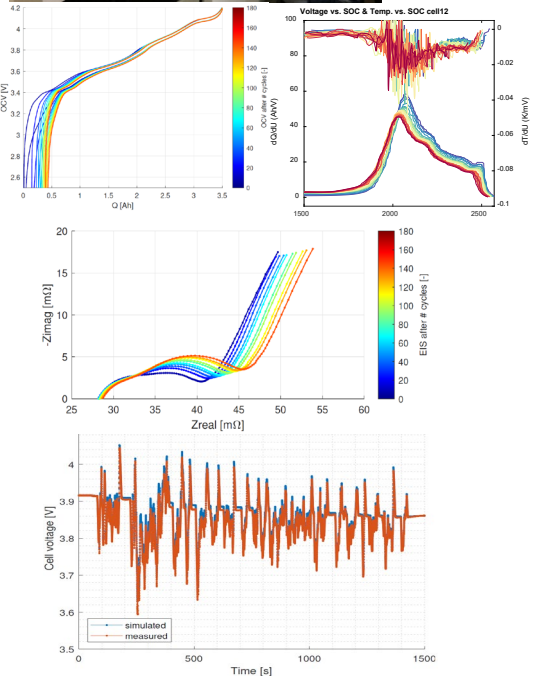
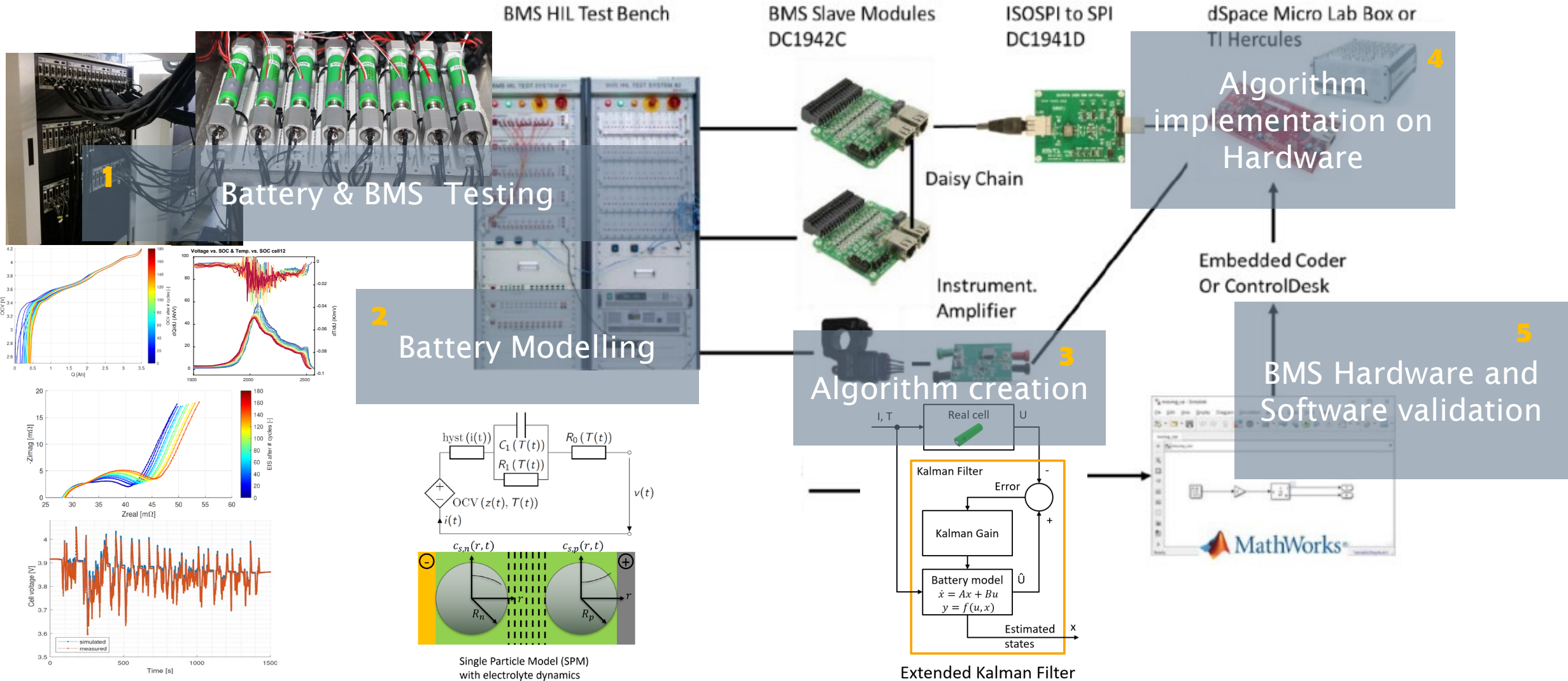


Industrial scale battery demonstrators

- ☐ Multi-service battery energy storage system
- ☐ Compressed air energy storage system



BFH – Battery and Storage Systems Lab



Focus on battery lifetime models

Testing

Electrochemical characterization of different chemistries:
LFP NMC LTO



Single cells of different formats, packs, modules.
Test of at least 3 samples.

Definition of cycling test according to application.
Design of diagnostic cycles to investigate degradation.

Investigation

EIS & resistance increase
Capacity fading
OCV modification due to aging
Swelling force influence
Incremental differential analysis
Coulombic efficiency

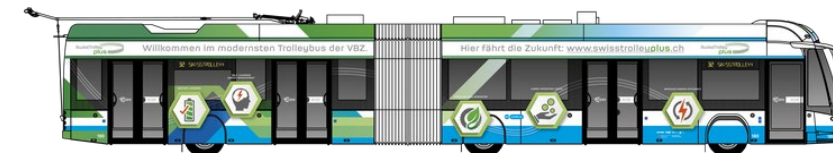


Modelling

SOH model options:

- Statistical model
- Equivalent Circuit model
- Full order physics-based
- Reduced order PBM
- Machine Learning

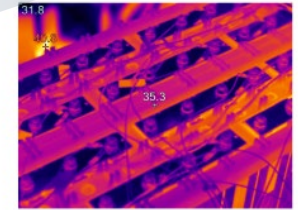
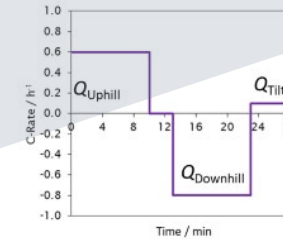
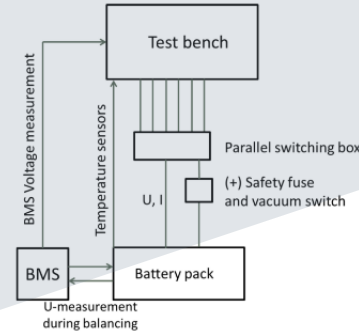
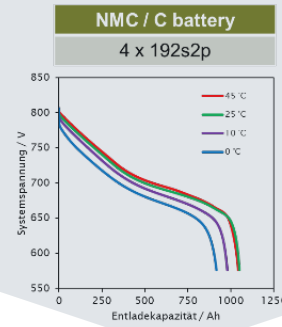
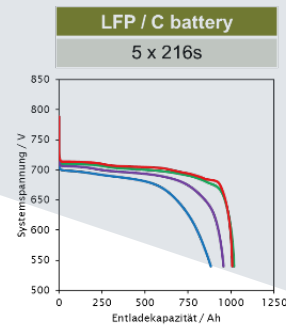
Estimation of remaining lifetime
Monitoring & Diagnostic of degradation
Indication on how to recover/stabilize degradation



Battery Application and System Design

from RESEARCH

- Technology selection
- System architecture
- Design Optimization
- BMS and functional safety
- Heating/Cooling analysis



to PRODUCTS

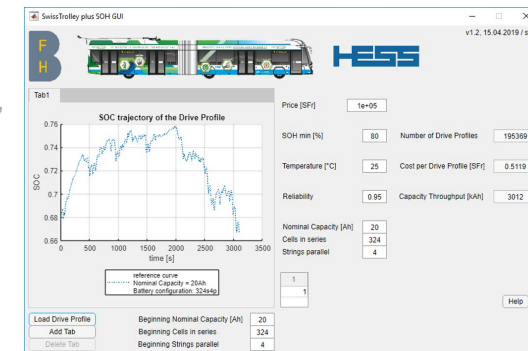
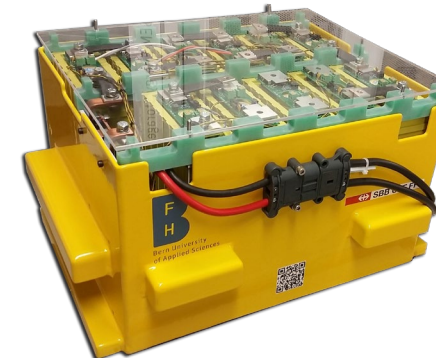
Main Applications:

- ✓ Low production number/niche market
- ✓ Flexible and highly customized battery system



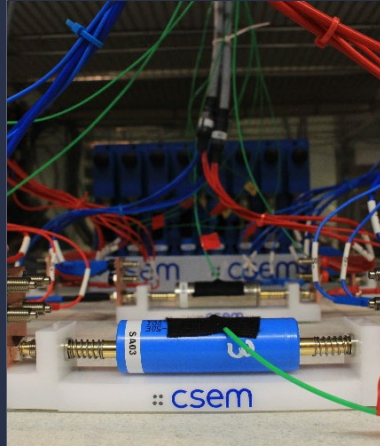
Prototype and Field Trials:

- ✓ from hardware to software



Battery research activities @ CSEM

Performance tests



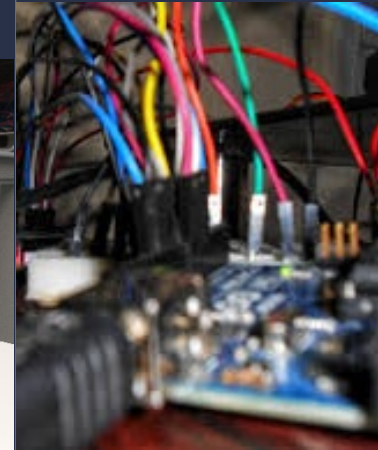
- Technological screening
- Testing protocols
- Second-life

Cell modelling



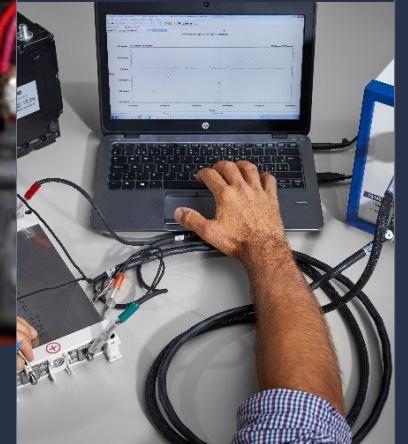
- Modelling
- SoC estimators
- SoH estimators
- BMS

BMS development



- CMS concept
- Active balancing
- EIS integration

System-level analyses



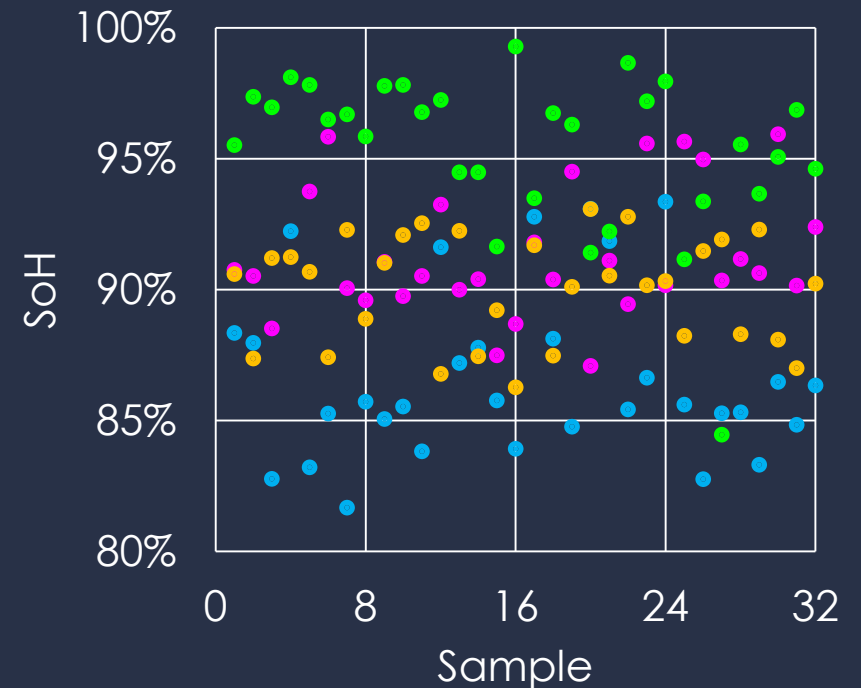
- Frequency regulations
- Wind+BESS optimization

BAT4SEL project: Battery Accelerated Testing for SEcond-Life

Focus of the project aged lithium-ion cells, 4 technologies, 2 chemistries (i.e. NCA and NMC), more than 500 cells under tests.

Objective of the project: verify the feasibility of a fast-testing procedure to estimate SoH of used lithium-ion cells

Outcome of the project enable rapid battery second-life qualification by means of dedicated testing equipment.



Industrial partner
Cell provision and validation
Contact person: *Nicolas Bahamonde*



Research partner
Research activities+ Project management
Contact person: *Claudio Brivio (claudio.brivio@csem.ch)*

EU projects **HIDDEN** and **SPARTACUS**: future generation of Smart batteries



Sensing project



Self-healing project

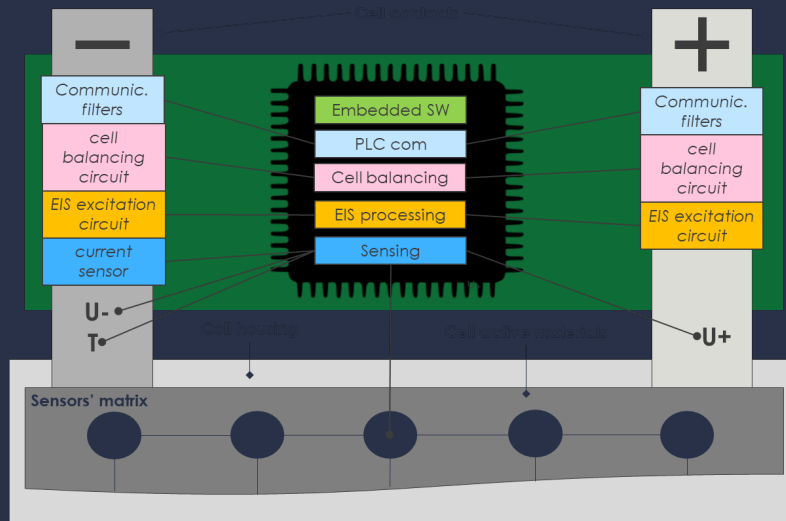
Main objectives:

- Development of new affordable sensors and integration onto cell's surface
- Development of an innovative BMS architecture to handle and exploit data

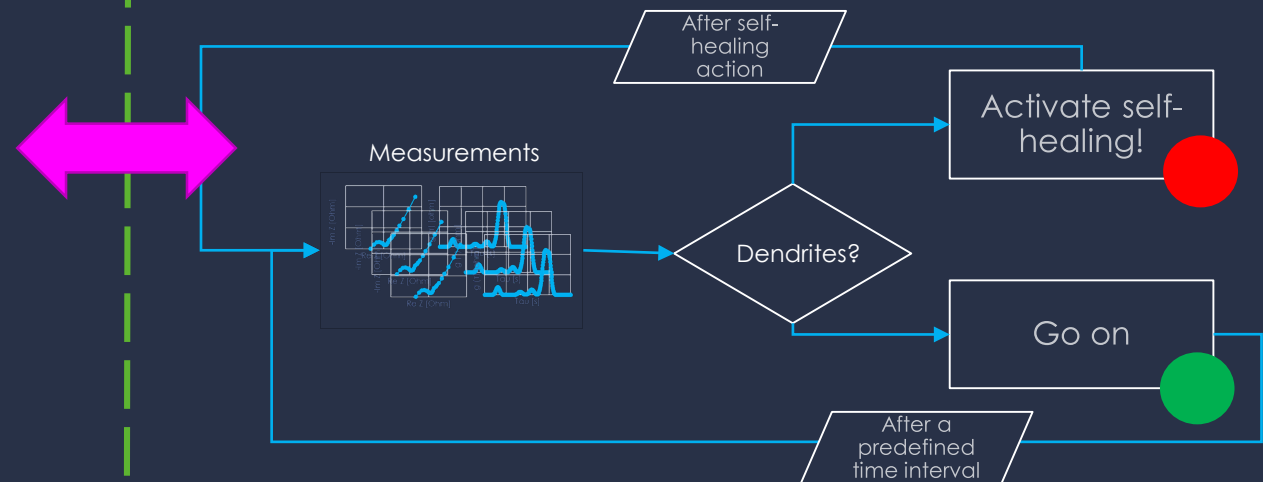
Main objectives:

- Development of TILC and piezoelectric separators to reduce dendrite growth in Li-metal batteries
- Development of algorithms able to detect dendrite growth and activate self-healing

CSEM role: cell management system



CSEM ROLE: detection algorithms

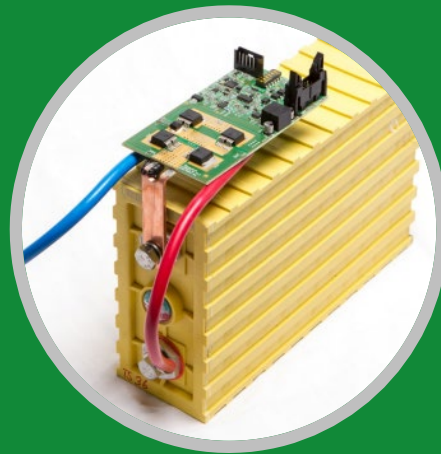


ökozentrum

forschen | entwickeln | bilden

R&D-Activities

Battery-powered devices and machines | storage systems | system demonstrators



Energy in systems

Demonstrators for second life applications



Concept and design



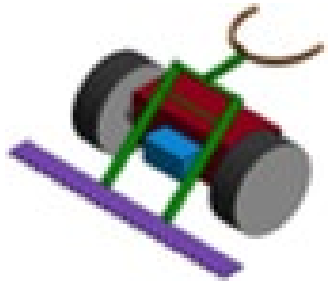
Construction



Operation / data acquisition

From concepts to products

Developing an electric mower



New idea and concepts



Functional model for testing



Final design



New products



Swiss innovations for **B**attery
Applications and **T**echnologies

Thank you!

Presentation KLiB: Kompetenznetzwerk Lithium-Ionen-Batterien



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

























































10.11.2020

iBat online event

Dr. Michael Krausa
KLiB-general manager

Members 2020

F&E	Batteriematerialien und -komponenten						Zellfertigung		Batteriefertigung		OEM
	Rohstoffe u. Recycling	Anode	Kathode	Separator	Elektrolyt	Komponenten	Produktionstechnologie u. Automatisierung	Zellfertigung	Produktionstechnologie u. Automatisierung	Batteriefertigung	
 elfolion	 umicore	 CS ADDITIVE	 CUSTOMCELLS*	 FREUDENBERG	 BRAUN	 SLDPACK*	 BOSCH Automation	 CUSTOMCELLS*	 BOSCH Technik fürs Leben	 HOPPECKE POWER FROM INNOVATION	 VOLKSWAGEN AUTO MOBILITY GROUP
 Fraunhofer BATTERIE	 umicore	 EVONIK	 EVONIK	 WACKER	 BOSCH Technik fürs Leben	 Continental	 FS	 AAA Leclanché Energy Storage Solutions	 Continental	 LIACON	
 JÜLICH Forschungszentrum	 EVONIK	 JM Johnson Matthey	 JM Johnson Matthey	 umicore	 coperion	 exyte	 LSF Korea LFP GmbH & Co. KG	 LIACON Batteries	 exyte	 LSF Korea LFP GmbH & Co. KG	
 JUSTUS-LIPIUS UNIVERSITÄT GIESSEN	 JM Johnson Matthey	 umicore	 RAIN	 OFENBAU	 KEYSIGHT TECHNOLOGIES	 KUKA	 KEYSIGHT TECHNOLOGIES	 KUKA	 KEYSIGHT TECHNOLOGIES	 KUKA	
 KIT	 sgl carbon	 ONEJOON	 WACKER	 ONEJOON	 manz	 BRAUN	 manz	 manz	 PEC	 SAFION MEASURE WHAT MATTERS	
 meet	 WACKER	 ONEJOON	 SAFION MEASURE WHAT MATTERS	 SAFION MEASURE WHAT MATTERS	 PEC	 SAFION MEASURE WHAT MATTERS	 PEC	 SAFION MEASURE WHAT MATTERS	 SIEMENS	 SIEMENS	
 RWTH AACHEN UNIVERSITY	 thysenkrupp	 4D INTELLIGENT SCHNELL ZUVERLÄSSIG	 TUM	 TUM	 SIEMENS	 STÖBICH technology	 SIEMENS	 STÖBICH technology	 STÖBICH technology	 thysenkrupp	
 TU	 thysenkrupp	 4D INTELLIGENT SCHNELL ZUVERLÄSSIG	 ENERGIE	 ENERGIE	 thysenkrupp	 4D INTELLIGENT SCHNELL ZUVERLÄSSIG	 thysenkrupp	 4D INTELLIGENT SCHNELL ZUVERLÄSSIG	 thysenkrupp	 4D INTELLIGENT SCHNELL ZUVERLÄSSIG	
 SW											

Weitere Mitglieder



Kompetenznetzwerk Lithium-Ionen-Batterien e. V. KLiB

Vision

Global competitiveness and sustainability of all elements of the lithium-ion battery value chain in Germany as a high-tech location

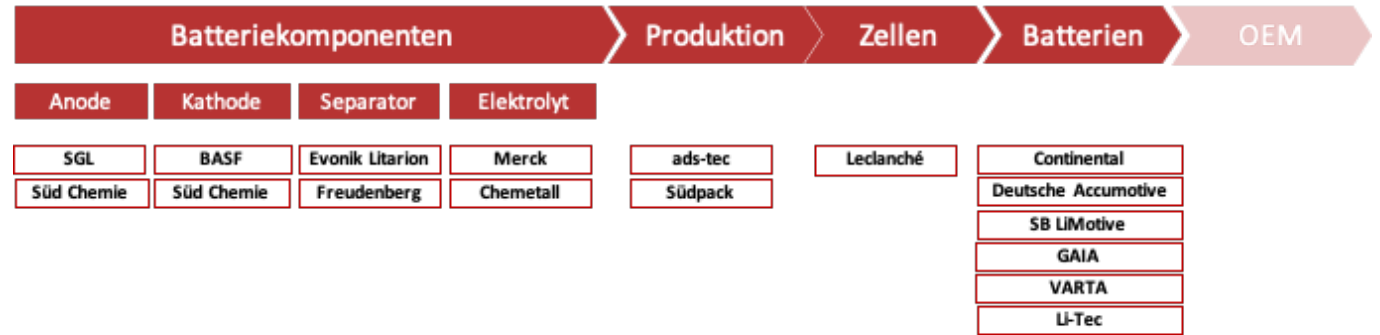
Mission

We actively strengthen the global competitiveness of Germany as a high-tech location in a European context by providing sustained support for a leading lithium-ion battery value chain

- **We network industrial companies, research institutes and public institutions** in a cross-industry technology approach.
- **We lead the cross-industry dialogue and initiate and moderate the cooperation** of the members until the formation of consortia.
- **We strengthen public awareness** of the economic significance of this future technology rechargeable batteries for Germany as a high-tech location and the added value of Members.

2010

Kompetenznetzwerk Lithium-Ionen Batterien

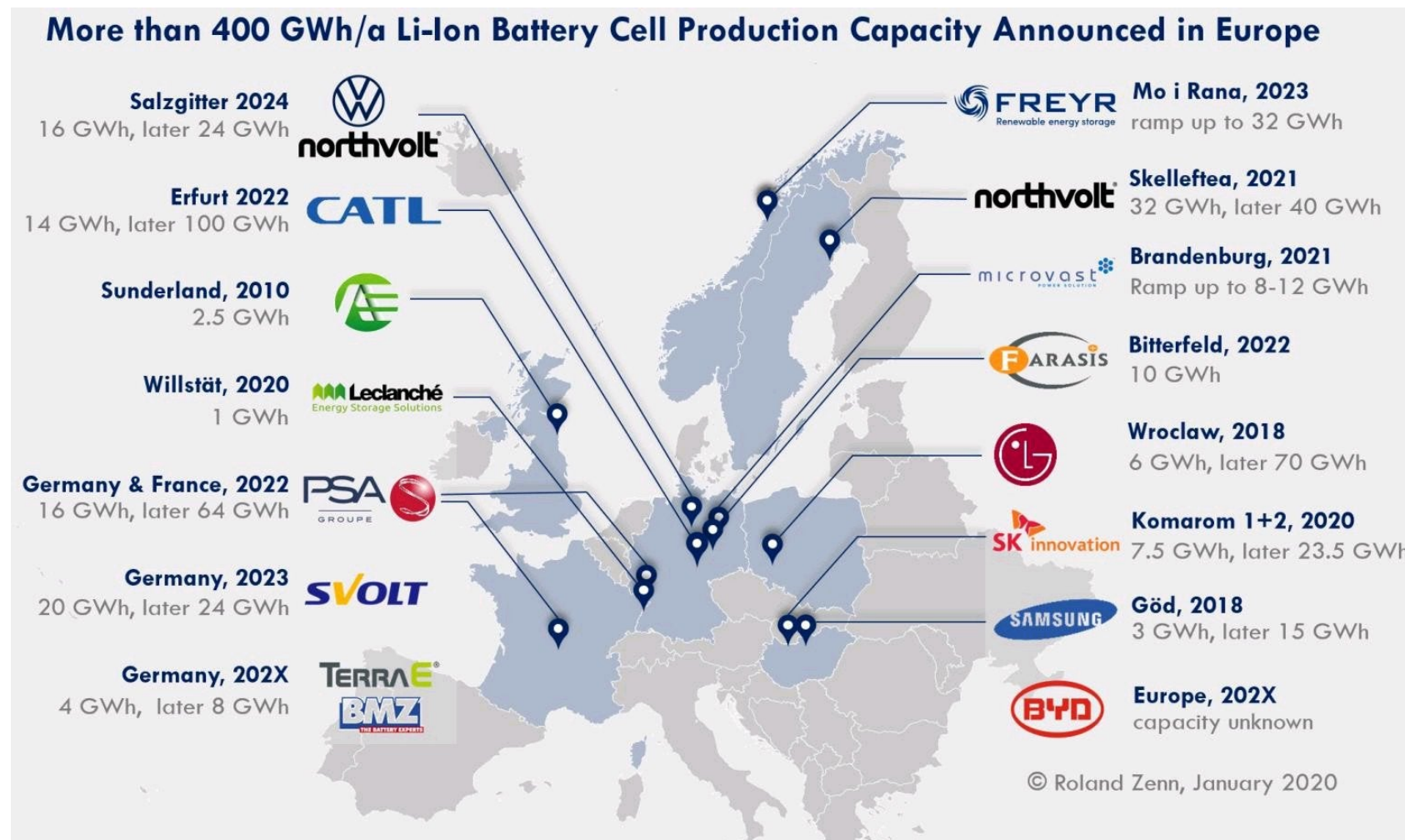


ZSW

KLiB - Founding members

European Cell Manufacturer

- Batttrion
- Blackstone Technology
- CustomCells
- EAS
- Liacon
- Renata
- Varta

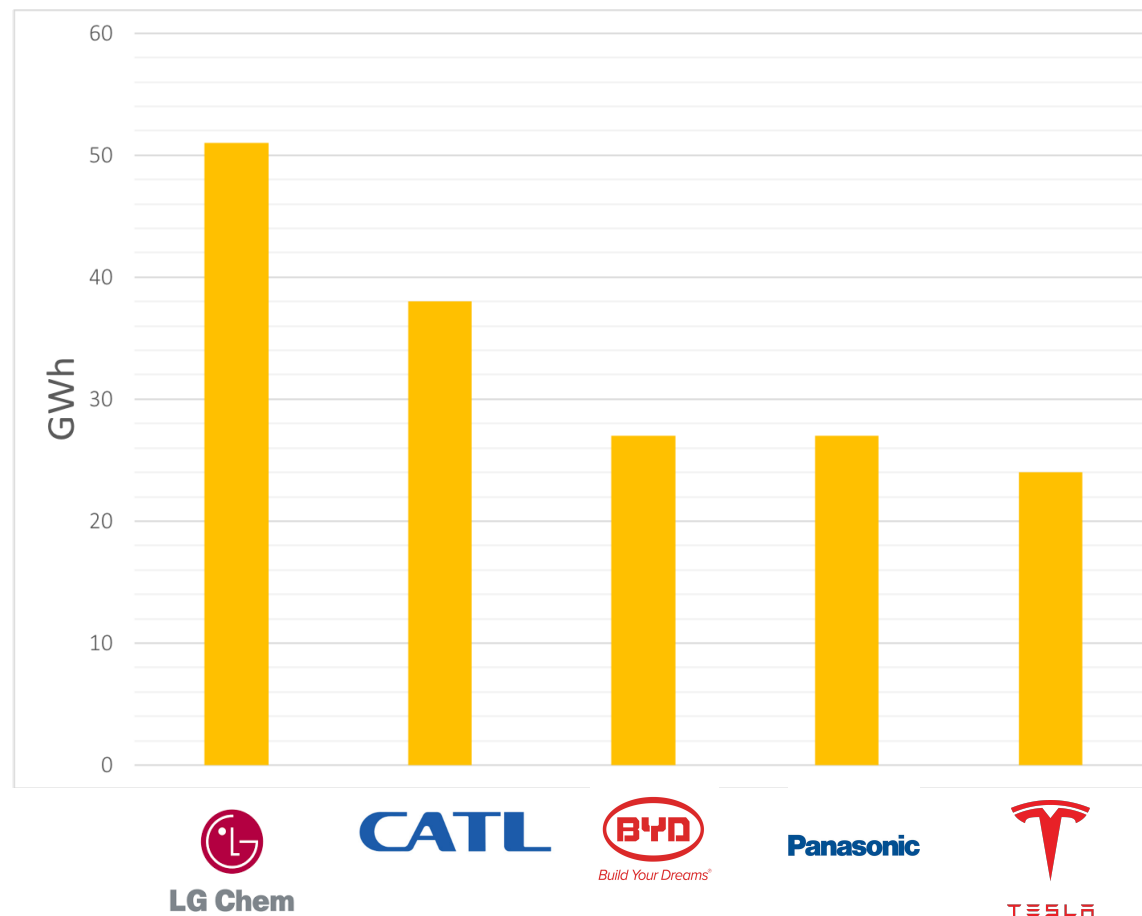


Top 5 cell manufacturer 2019

Percentage share of global cell production :

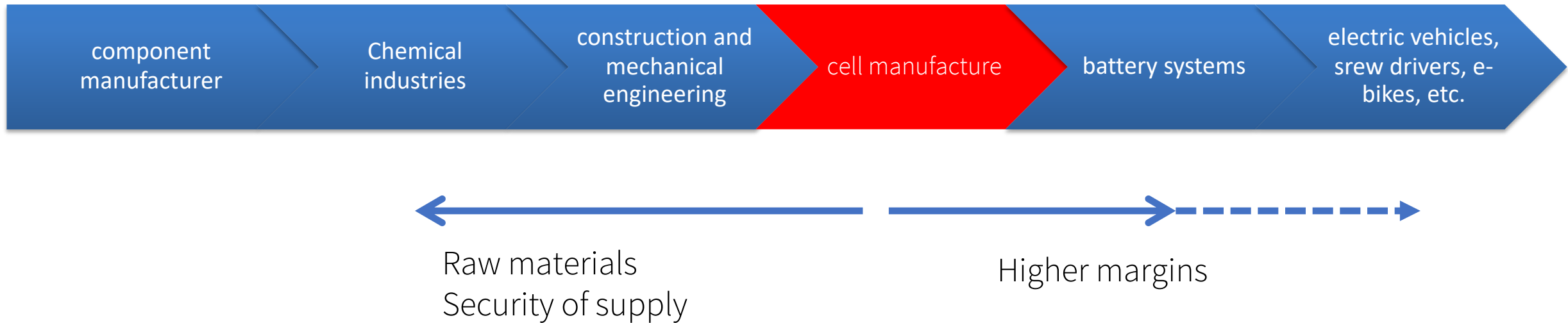
China	53%
Japan	16%
Korea	11%
other	20%

Quelle: Mercator Institute for China Studies,
<https://www.merics.org/cn/node/8371>



Quelle: Benchmark Mineral Intelligence, <https://www.benchmarkminerals.com/who-is-winning-the-global-lithium-ion-battery-arms-race/>

Forward and backward integration of cell manufacturers



- Risk of losing complete value chains
- Dependence on potential competitors
- Lesser chance on joint development of cell and thus on leading products
- Risk by supply bottlenecks along the complete value chain (raw materials, components, machinery, etc.)

Importance of batteries for a high-tech site

- Energy transition is not feasible without storage technologies
- 30-40% of the added value of an e-car depends on the battery
- Functionality and operating time of many products depend on the performance of the cell used
- Dependence of key industries on other international business locations & development partners



Dreams of do-it-yourselfer

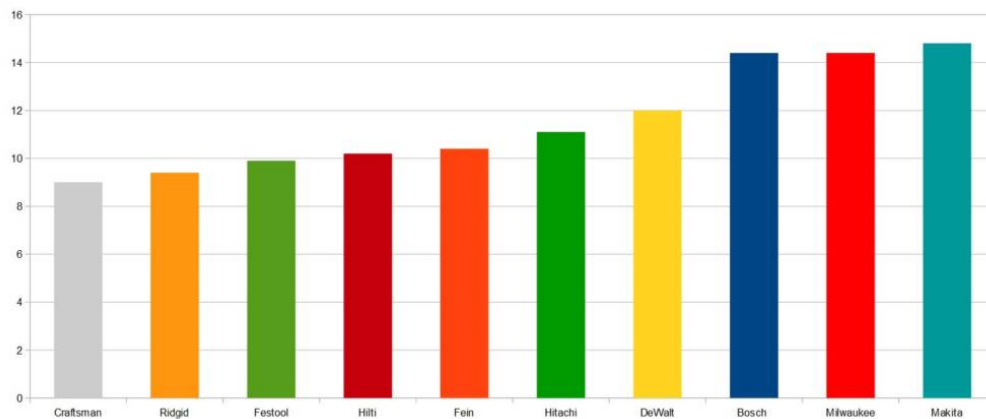


Quelle:
<https://www.greaterzuricharea.com/de/news/battrion-und-hilti-stellen-neue-batteriezele-vor>

unit: screws / Wh !

winner: 14,8 screws / Wh

last one: approx. 9 screws / Wh



Quelle: <https://www.protocolreviews.com/buying-guides/best-12v-cordless-drill-roundup/25102/>

Circular economics

- „young“ value chain but experienced industries
- Sustainability, low CO₂ footprint and high energy efficiency as competitive advantages (Green Deal)
- strengthening the dialogue between all industries along the entire added value chain



Swiss-German Industry Dialogue on Battery Supply Chain

jointly organized by iBAT and KLiB

- Goals: Building a platform to strengthening the dialogue between Swiss and German companies and to find new partners by getting to know each other better
- Format: presentations of Swiss and German companies
- Presentations by: Bühler AG, CustomCells Itzehoe GmbH, Eaton, ElringKlinger AG, Kyburz Switzerland AG, Keysight, Blackstone Technology GmbH , E-Lyte, ABB Schweiz AG, Imerys Graphite & Carbon Switzerland AG
- Date: December 9th, 2020, online



Merci vilmal



Swiss innovations for **B**attery
Applications and **T**echnologies

Thank you!

Design Thinking Approach



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A photograph showing a group of people's hands working together on a table. They are using markers to draw diagrams and sticky notes on papers. One sticky note says "Process", another says "SEARCH", and another has an arrow. The background shows a complex flowchart or organizational chart.

UniNE – Institute of Management

The chair for innovation management at the University of Neuchâtel's Institute of Management has expertise in the collaboration between research and industry partners in the fields of strategy and innovation.



Applied research



Executive education



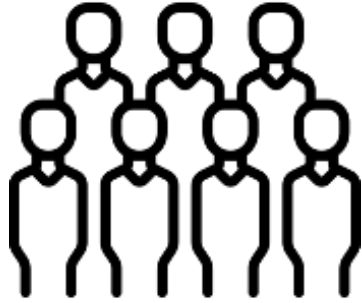
Facilitation of workshops

Design Thinking

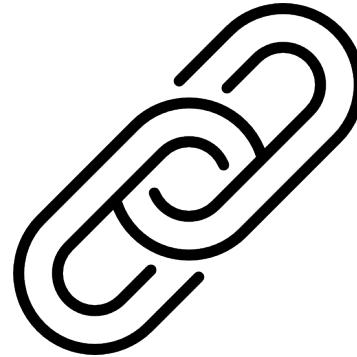


Design Thinking is a management process:
A “fast-paced, user-centric approach to develop effective solutions which are tailored to users' needs.” (IBM)

Design Thinking – What is it?



A **human centric approach** that can be used for products — both physical and digital — as well as for services and experiences.



It aims to **integrate** the **needs** of people, the possibilities of **technology**, and the requirements for **business** success.



Interactive and **collaborative**

Why does Design Thinking work?

Traditionally, Innovation is Seen as the Result of Basic Research

Technology Push Approach



Observation 1

80%

Of newly introduced products fail to establish a market presence after two years

Google Glass - "Explorer" program in 2013



UK Business Insider

...customers' concerns for privacy, appearance and price.

Mercedes Home Battery Pack



...too expensive and over-served its customers.

One Daimler spokesperson: “It’s not necessary to have a car battery at home: They don’t move, they don’t freeze. It’s over-designed.”

Discontinuous Innovations Require Buyers to Change their Behavior Patterns

Differ from existing products/ technologies in that field, sometimes creating entirely new markets and they require buyers to change their behavior patterns.



Also Consumers May Not Yet Know And Understand Their Future Needs



1960s: Microcomputer initially rejected, as consumers did not see any use for it.

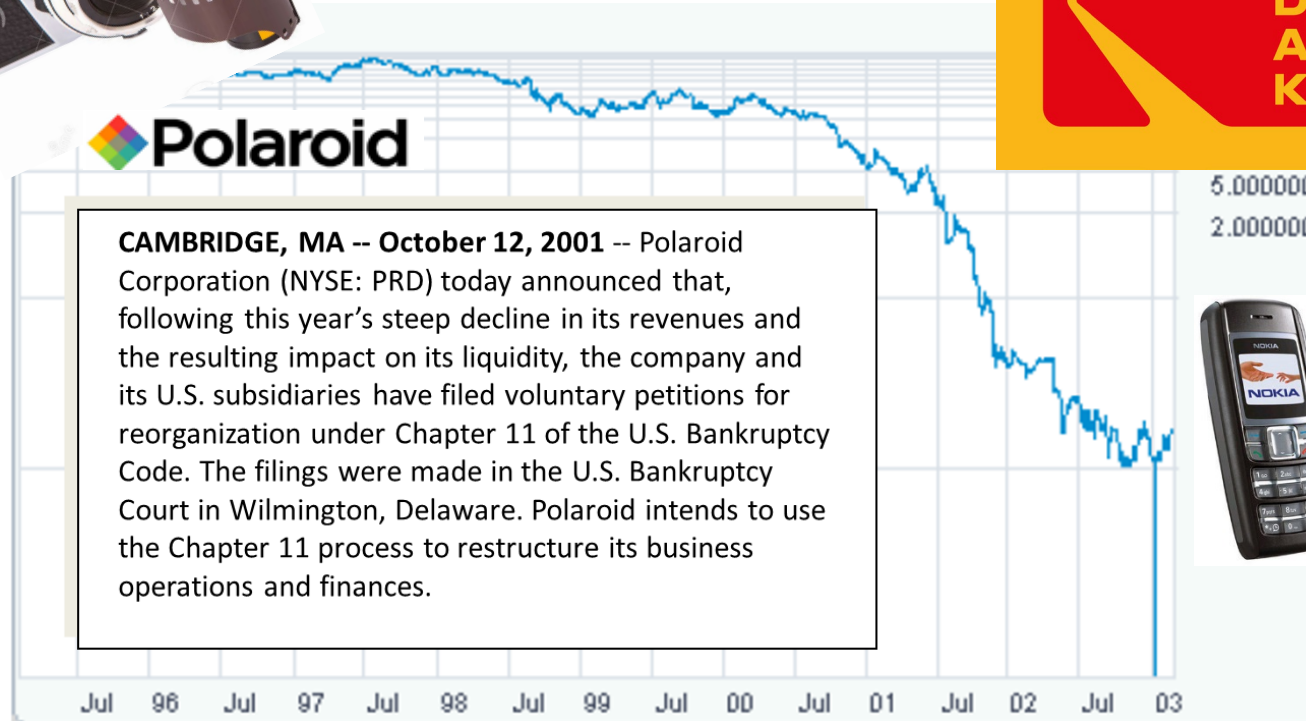
Observation 2

Often, once successful firms fail in the face of disruptive technologies

Because They Failed to Adapt their Strategies to the New Realities



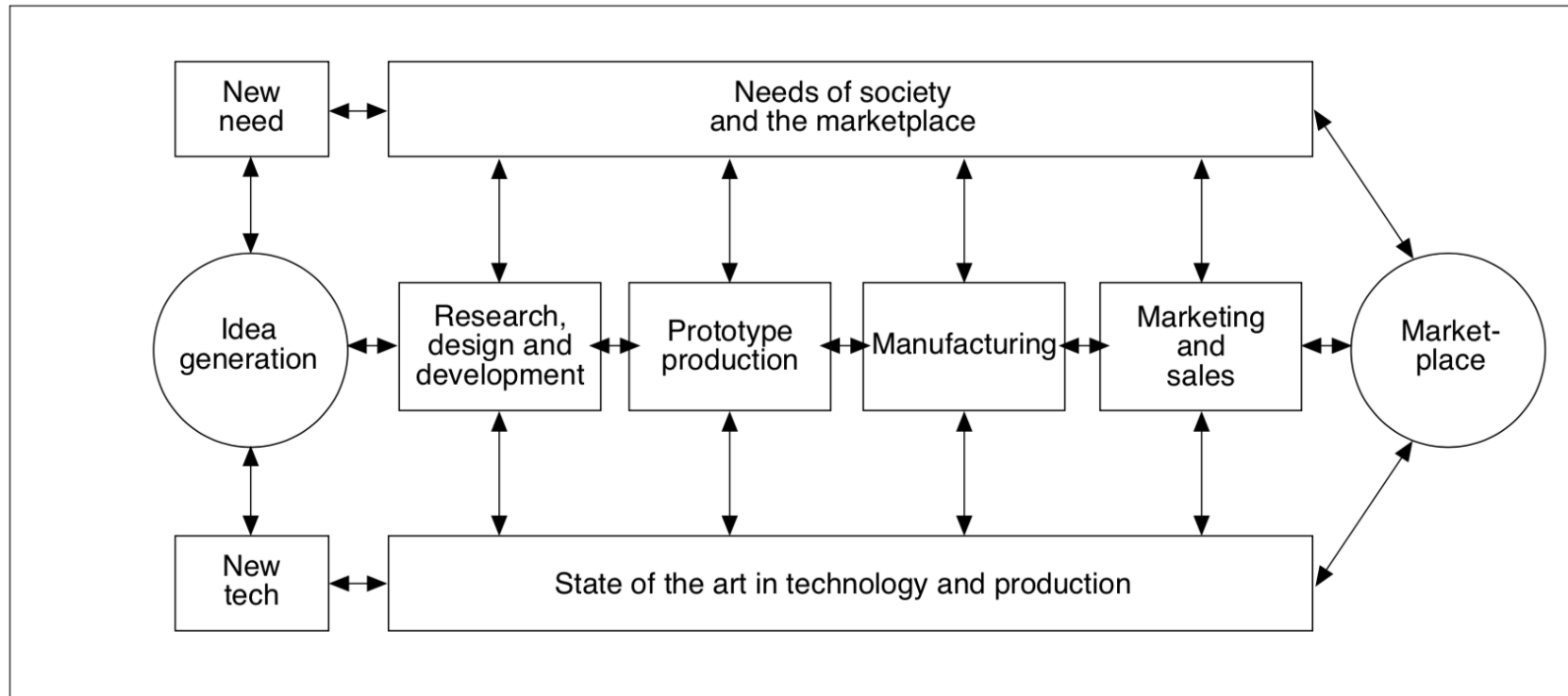
 **Polaroid**



CAMBRIDGE, MA -- October 12, 2001 -- Polaroid Corporation (NYSE: PRD) today announced that, following this year's steep decline in its revenues and the resulting impact on its liquidity, the company and its U.S. subsidiaries have filed voluntary petitions for reorganization under Chapter 11 of the U.S. Bankruptcy Code. The filings were made in the U.S. Bankruptcy Court in Wilmington, Delaware. Polaroid intends to use the Chapter 11 process to restructure its business operations and finances.



There is a Need to Continuously “Couple” Technology Development with the Market Needs



Rothwell, 1994.

Why does Design Thinking work?

Design Thinking – 4 Principles



A focus on User Outcomes:

Success is measured by how well users' needs are fulfilled



Diverse Empowered Teams:

Higher chances for breakthrough ideas



Restless Reinvention:

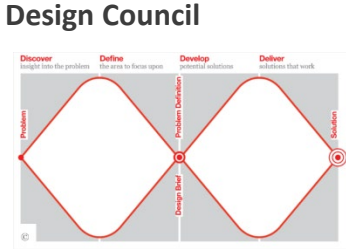
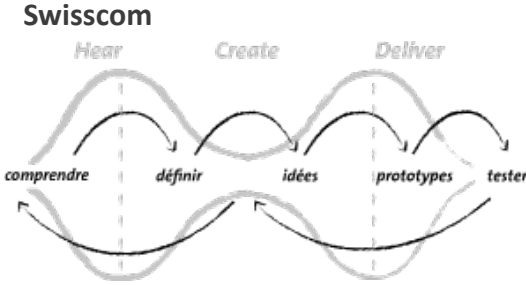
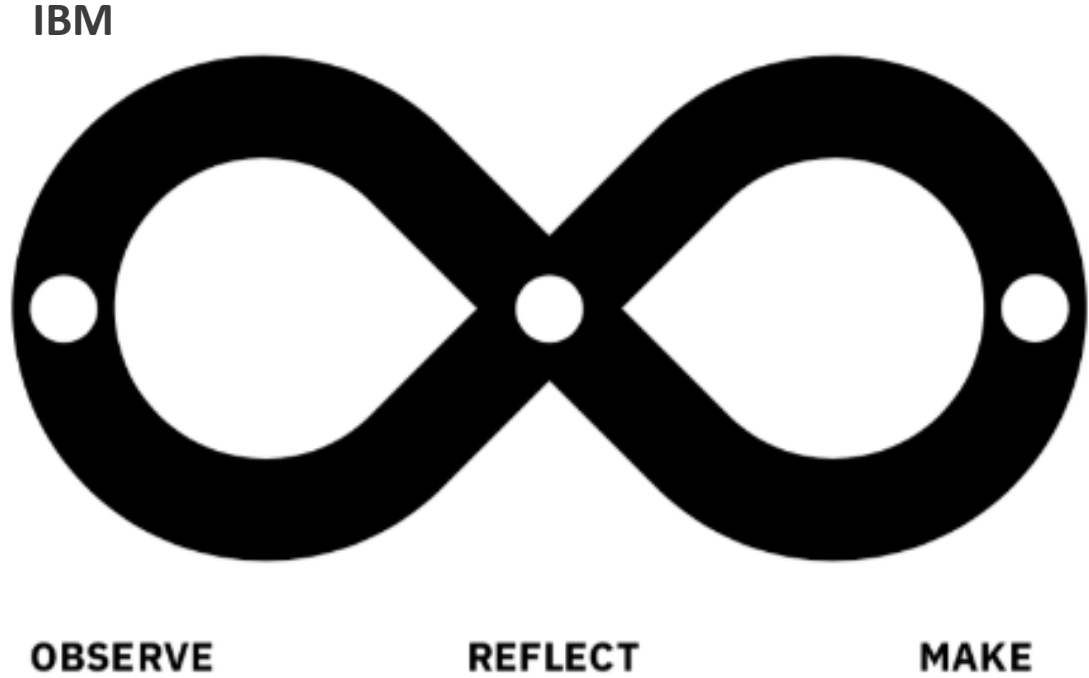
Everything is a Prototype



Radical Collaboration:

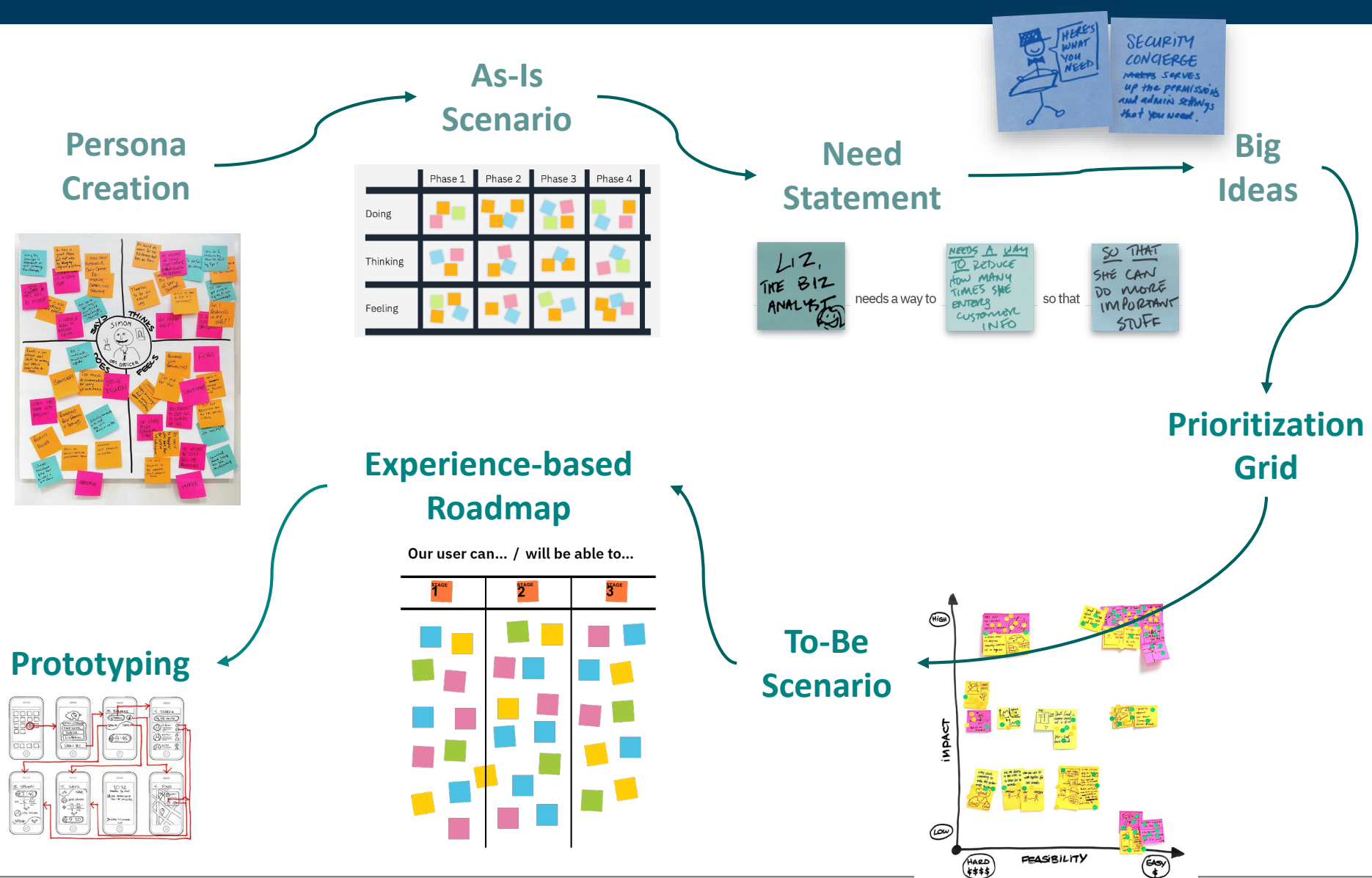
All key stakeholders co-create user experiences

Design Thinking Process by IBM



IBM, 2019.

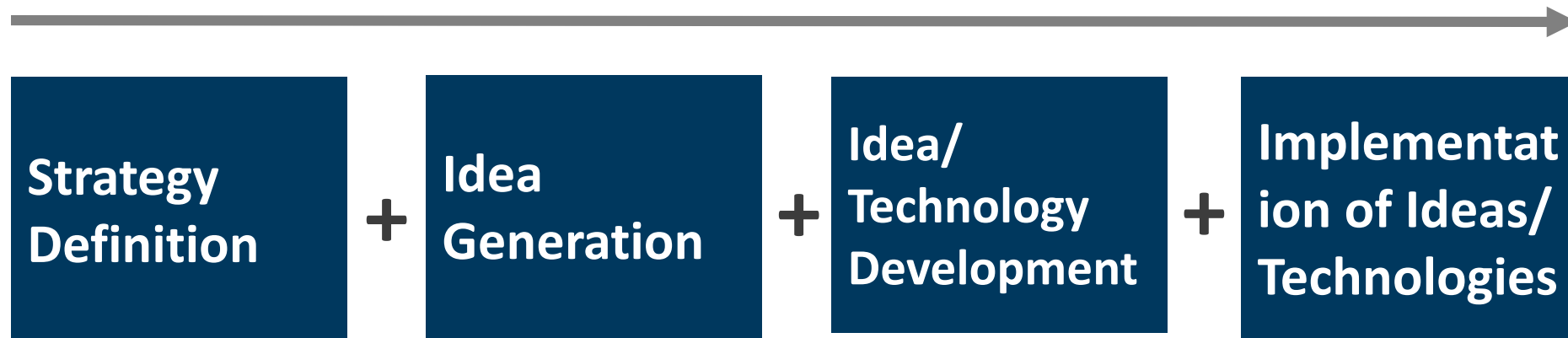
A Sample Design Thinking Process



IBM, 2019.

Design Thinking Methodologies Find Wide Areas of Application

Strategic Innovation Management Process



Trott. 2012. Garud et al. 2013; VandeVen et al., 1989, VandeVen et al., 2008.



Swiss innovations for **B**attery
Applications and **T**echnologies

Thank you!

Programm 2021



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Objectives and resources

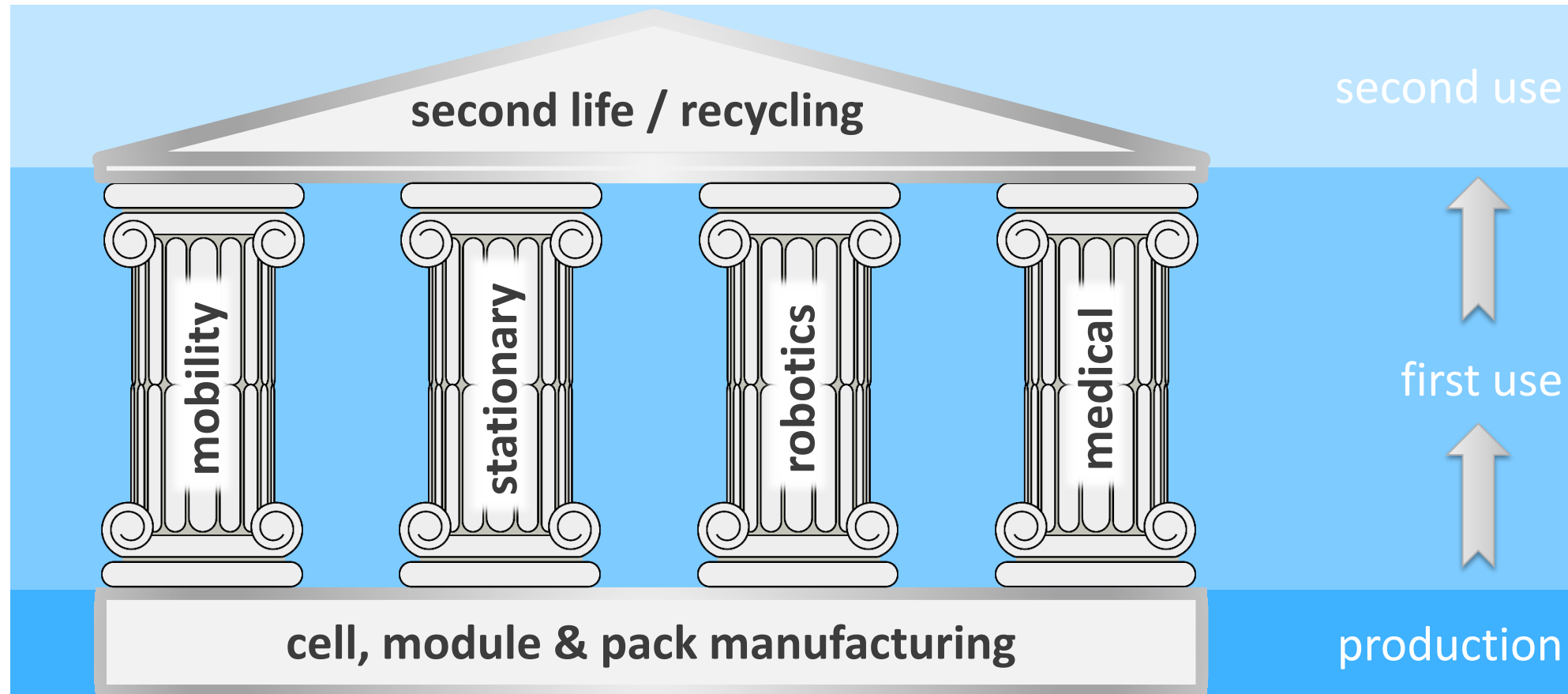
Objectives

- networking & active industry/research partner exchange
- identification of industry needs and pain points
- exploration and launch of new innovations ideas
- representation of Swiss interests and needs in Europe

Resources

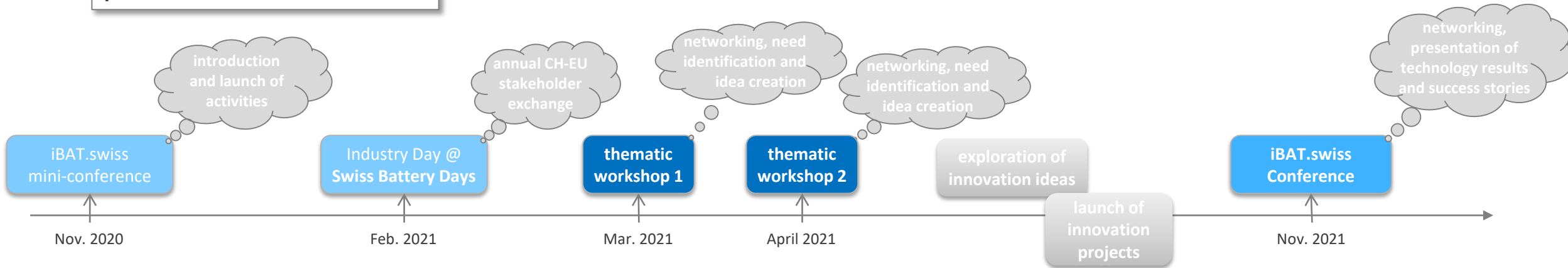
- motivated executive team
- the entire Swiss research landscape
- interest from Swiss industry landscape
- financial support from Innosuisse for 4 years

Domains of interest for the Swiss industry

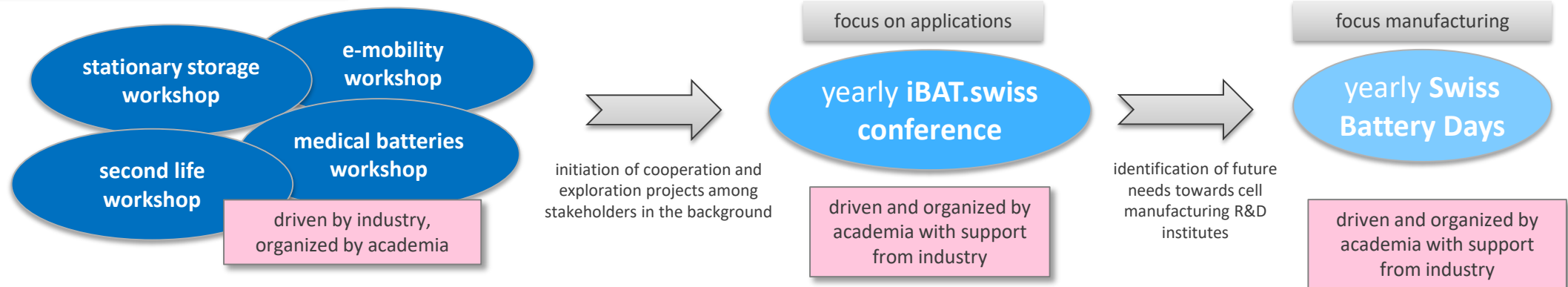


Event structure

planned event structure for 2021



logic behind the event structure



Workshops planned for 2021

- focus on **e-mobility** and **stationary storage**
- with **design thinking** support from Prof. Reuter (Uni NE)
→ two design challenges have already been launched in October 2020
- **Networking** ensured via
 - hosting at industry partner with relevant experience and presentation of lessons learned
 - presentation of capacities and know-how available at research partners, e.g. success stories
- **idea exploration** and follow-up financed via Innocheques from Innosuisse (max. 15k for exploration)
- launch of **innovation projects** for confirmed ideas with Innosuisse, SFOE P&D or direct projects

get in touch

Industry Day at the Swiss Battery Days 2021 – 17. Feb. 2021

iBAT to organize the afternoon session on Wednesday February 17th, 2021

focus topic: **EU & CH initiatives to foster battery innovation**

Development and funding opportunities for the European and Swiss battery industry

- **EU initiatives promoting economic opportunities**
two talks on the industry and funding perspective from [EU stakeholder](#) representatives
- **Strength, competences, identified needs and pain-points of the Swiss industry**
presentation of the Swiss contribution for three activity domains, including needs and expectations (high quality and low-cost battery cell supply, customized BMS solutions, re-use and recycling, etc.)
- **Map of CH stakeholders on the battery value chain**
overview of Swiss industry landscape and initial stakeholder consultation for positioning paper

Thank you for your attention!

Be part of the movement and become a member of iBAT

register at <https://ibat.swiss/become-a-member/>

www.ibat.swiss