Large-scale continuous coating of powders to enhance materials

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Who is Delft IMP

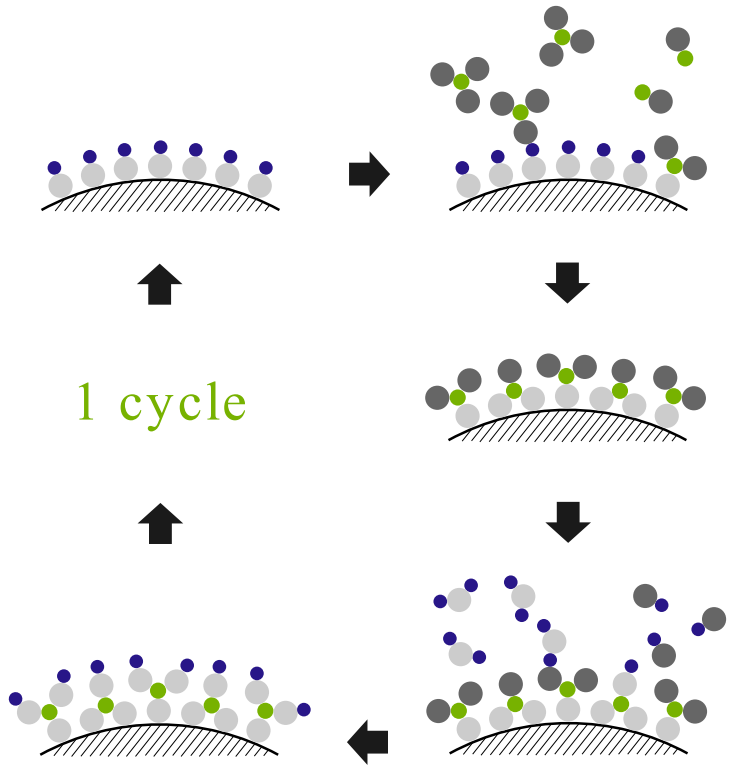
- TU Delft Spin-off (2014)
- Recently secured a 10M € investment to further scale the company & technology
- 15+ employees and growing
- Serving customers in 12+ countries
- Extensive knowledge on nanocoating scale-up and technology

Member of:

BEPA Batteries European Partnership Association

EUROPEAN BATTERY ALLIANCE | EBA250

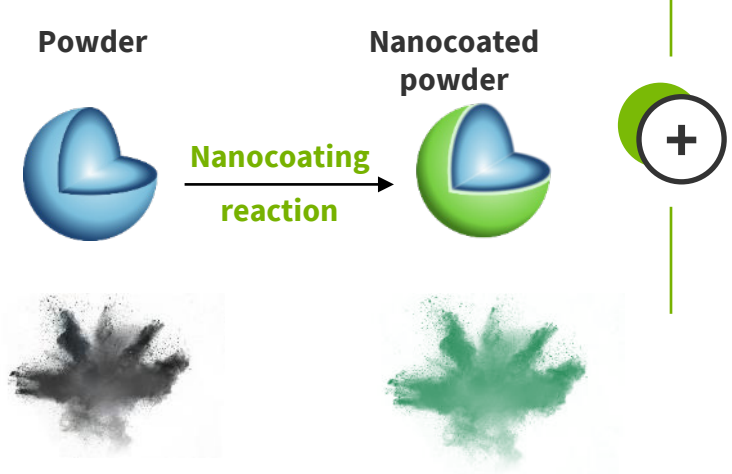
Delft IMP's technology is based on atomic layer deposition chemistry



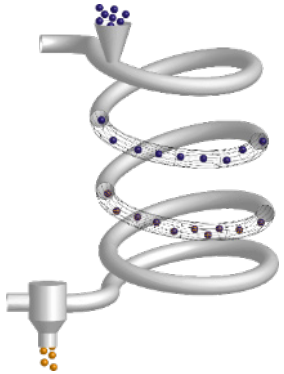
- **Vapor-phase, dry, no solvents**
- **Atomic level precision coatings on complex geometries**
- **Delft IMP has unique know-how to apply this at atmospheric pressure and on powders**

Delft IMP's patented technology offers low cost at high throughput…

Proven technology



Scalable and patented Process



…to enhance various applications

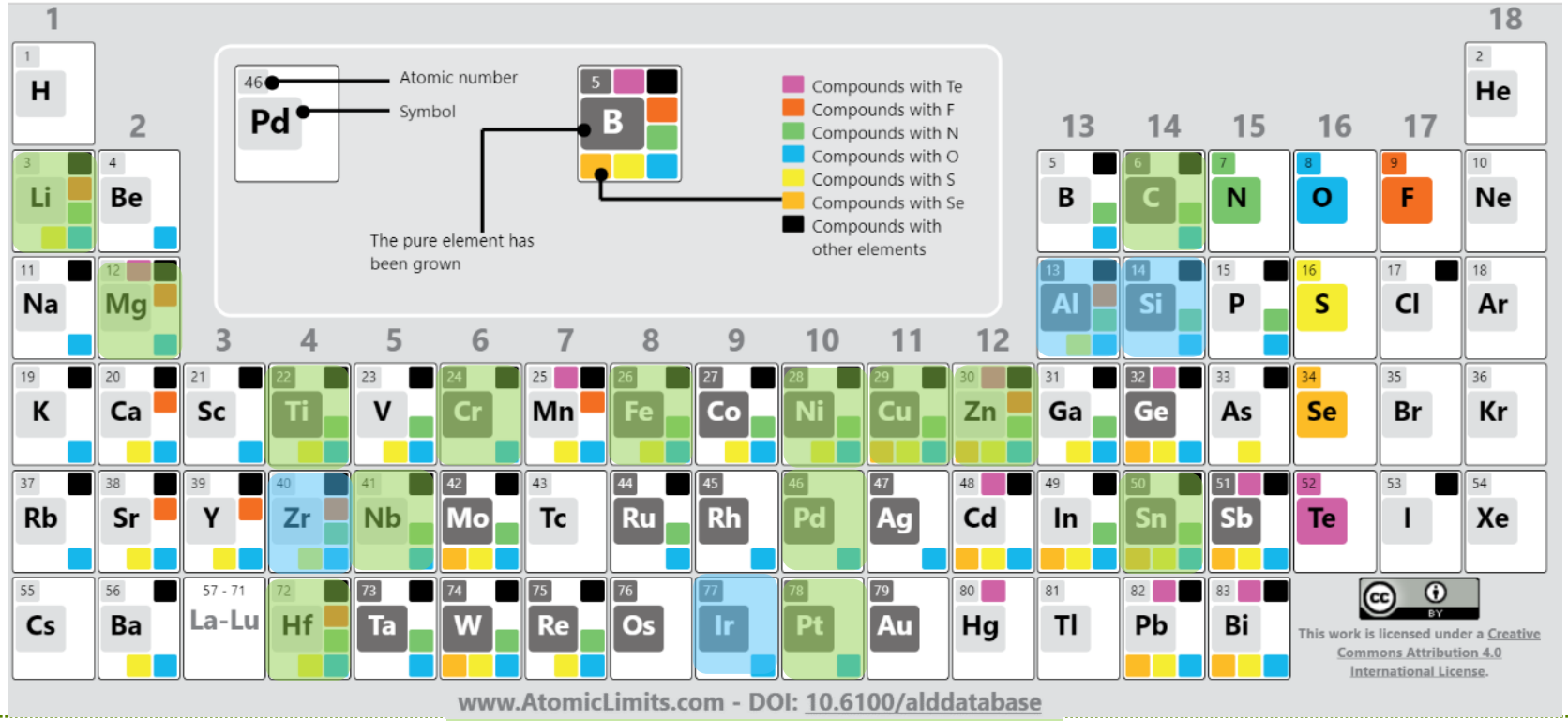
Catalysis

Fuel cells

Electrolysis

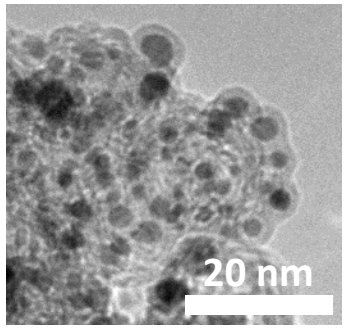
EV & Energy storage

Periodic table of ALD:
Showing the broad experience of Delft IMP

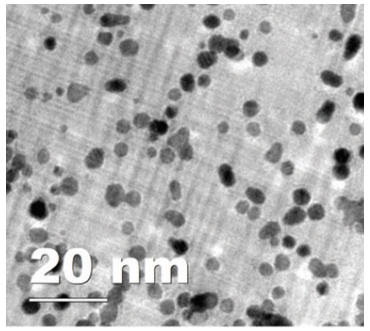


Delft IMP has a long track-record of coating various powders with different kinds of elements (in green)

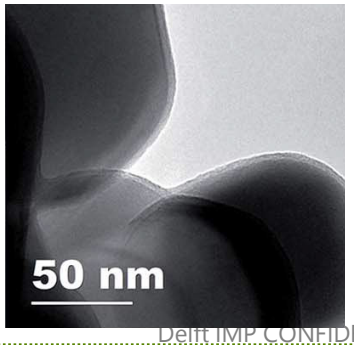
Al_2O_3 on C support



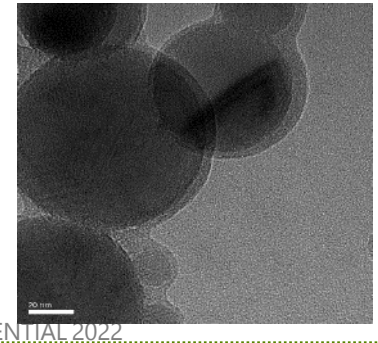
Pt on Graphene



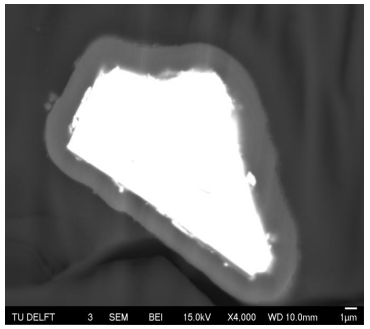
SiO_2 on TiO_2 NP



TiO_2 on Al_2O_3 NP



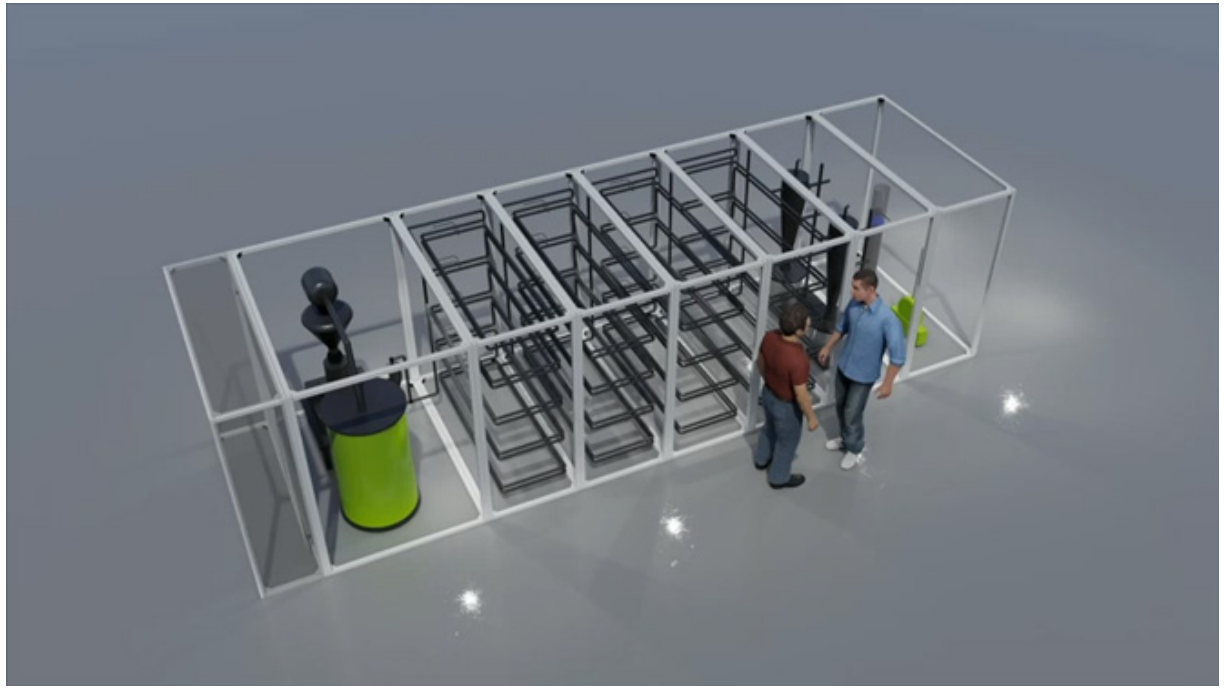
Al_2O_3 on $MoSi_2$



Selected Delft IMP Examples

Why batch -> continuous?

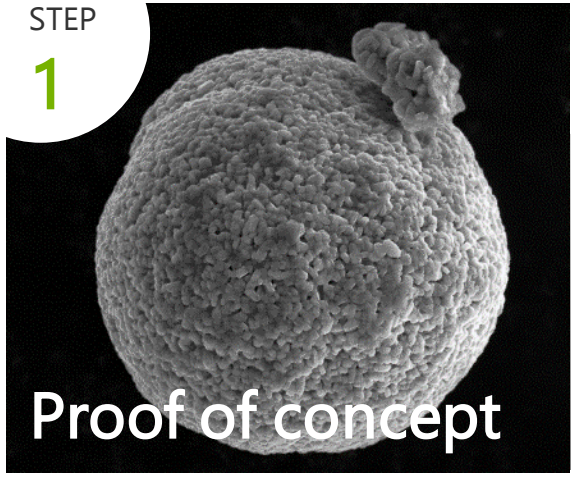
- Scalable in layers and throughput
- Low maintenance cost
- Minimal precursor loss
- Easy to fit in existing production line



Scale-up challenges

- Surface volume ratio
- Control
- N2 and heat consumption
- Precursor and powder handling
- Cleaning

From lab to industrial scale



Thanks!

For more info visit us at:
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