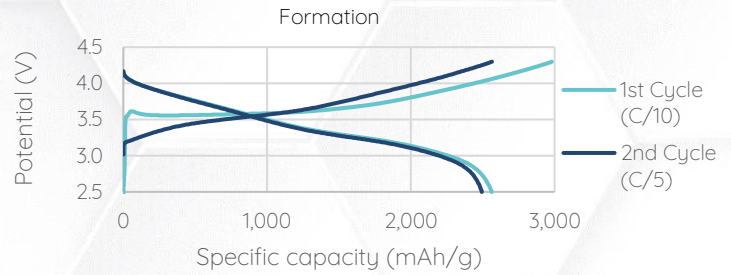
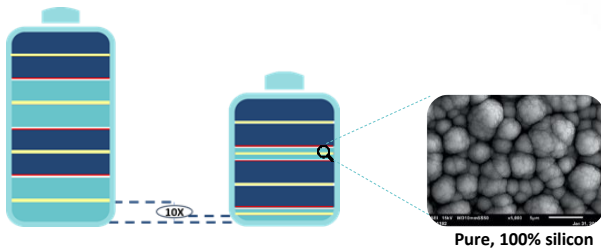


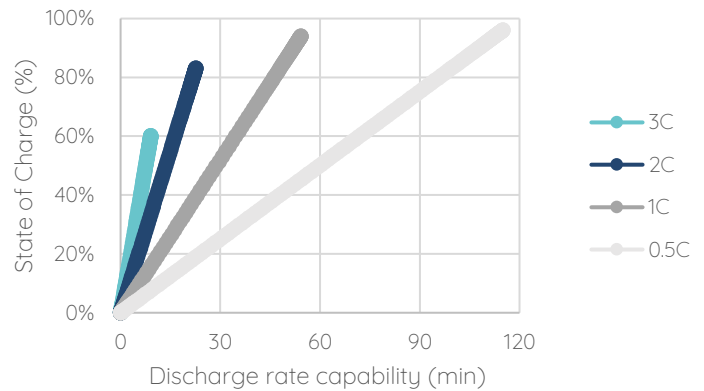
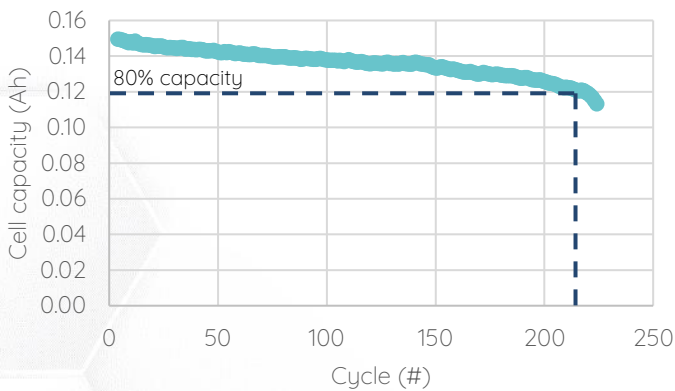
## 100% silicon anodes allow utilization of full theoretical capacity of silicon

- High anode capacity allows 10x thinner anode layers
- Nanoporous silicon structure ensures mechanical stability during lithiation and delithiation
- Compatible with off the shelf cathode, electrolyte and separator materials
- Initial Coulombic Efficiency of 92%+ (half cell)



Experience with mass loadings of 0.6 - 3.0 mg/cm<sup>2</sup>. Corresponding area loadings are 1.8 - 9.0 mAh/cm<sup>2</sup> and active layer thicknesses of 4-19 μm.

## Demonstrated 1350Wh/L (nominal, stack level), >200 cycles and >3C rate capability



### Cell details

- Single sheet pouch cells (7.0cm \* 4.5cm, double sided cathode + 2x single sided anodes)
- 9μm 100% silicon active layer (1.3mg/cm<sup>2</sup>)
- Off the shelf NMC622 cathode (3.5mAh/cm<sup>2</sup>)
- 12μm copper current collector (thinner is possible)
- LiPF<sub>6</sub> electrolyte with VC and FEC
- No binding materials, adhesives, conductive agents, etc.

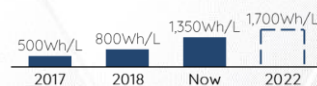
### Testing conditions

- Formation protocol: 1 cycle at C/10 and 1 cycle at C/5. 4.3V - 2.5V (CCCV)
- Cycle life test at C/2 -C/2 between 4.2 - 3.0V (CCCV)
- Cycling at room temperature
- No pre-lithiation
- Pressurized formation, no pressure during cycling

In the next 18 months, LJT expects to reach 800 cycles, 6C rate capability and demonstrate large format cells

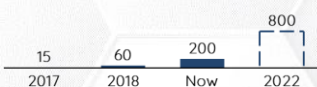
### Energy Density

(nominal, at stack level)



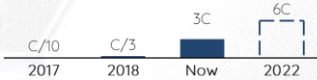
### Cycle life

(EOL80)



### Rate capability

(Continuous charge/discharge)



### Cell format



### Roadmap:

- Cell design for specific applications
- Customization of electrolytes to LJT silicon for improved cycle life
- Rate capability limited by cathode. Up to 5C performance witnessed using rate optimized cathodes
- Optimize silicon layer pore structure morphology
- Anode pre- & post-treatment options



LJT's proprietary roll-to-roll PECVD production platform allows for scalable and low cost production

- LJT's proprietary production platform combines 5 steps into 1
- Reduces battery anode CO<sub>2</sub> footprint by 85% as compared to graphite anodes
- Thin anode layers and low cost of silicon leads to production below cost parity at GWh scale

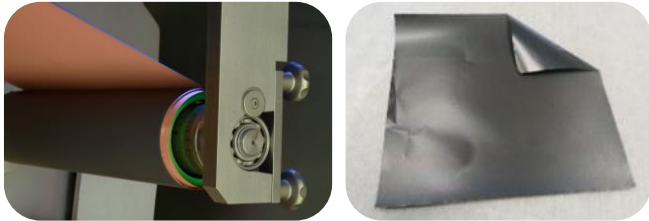
Traditional 5-step anode



LJT 1-step PECVD anode production



- “Plug-and-play” integration in existing battery Gigafactories
- No changes required to cell design
- Combines 5 process steps with >1400 process parameters into a single process step with <30 KPI's
- Modular roll-to-roll tool, scalable up to GWh capacity



In 2021, LJT demonstrated its roll-to-roll PECVD platform. Next step is to scale-up to GWh capacity

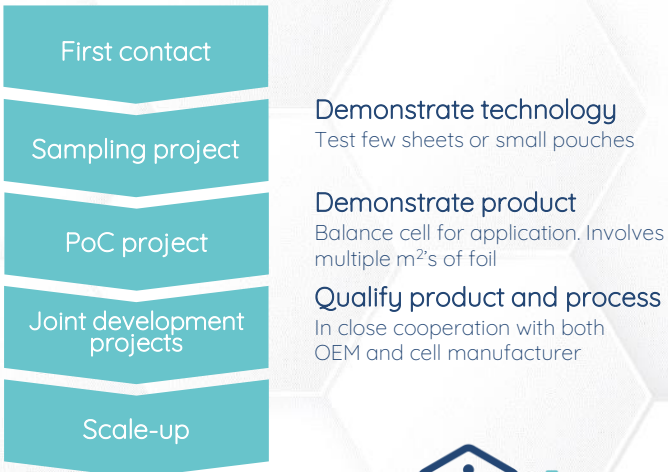


To date, LJT raised >€30m of capital

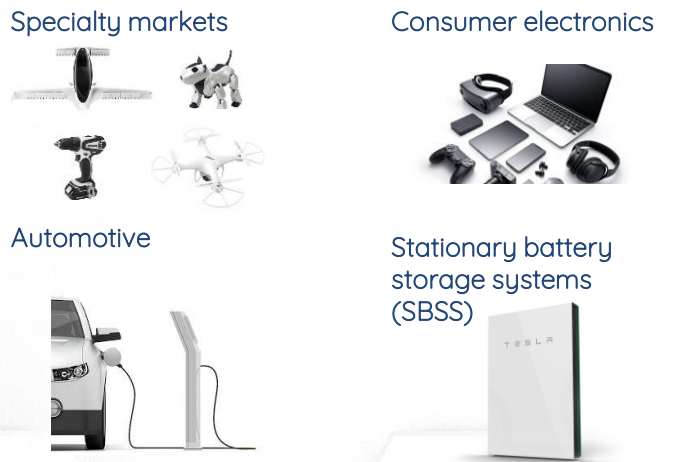
- 2016: Founding of LJT
- 2020: Demonstrated 1350Wh/L energy density
- 2021: Demonstrated roll-to-roll production 0.3MWh or 1km<sup>2</sup> per year. Soon 4MWh or 18km<sup>2</sup> per year
- 2024: First “LJTGen4” modular production line 0.3GWh or 1000km per year

Commercial engagements often start with a sample exchange

Typical commercial pipeline



LJT focus markets



For more information, please reach out to [info@leyden-jar.com](mailto:info@leyden-jar.com)

