

# Manufacturing Readout

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- ▶ Bit of a Catch-22: we don't know what we're manufacturing yet
- ▶ Good general principles
  - Learn from battery, semiconductor industries
  - Plug and play friendly (easy installation), works across multiple material sets, minimize HT sintering (1 step max, preferably 0), reduce part count per kW, synthesize particles & deposit in 1 step, enable nanomaterials, continuous process that's low CAPEX, inline QC
- ▶ Potential techniques: 3D printing, spraying, spike annealing (selective sintering), freeze casting
- ▶ Seedling vs. full project
  - Seedling: really interesting way of making one layer
  - Full project: whole cell at least, preferably the stack
- ▶ Importance of teaming
  - One group could develop new materials, other could think about less expensive ways of making it
  - Integrator should be the prime recipient, rather than materials scientist