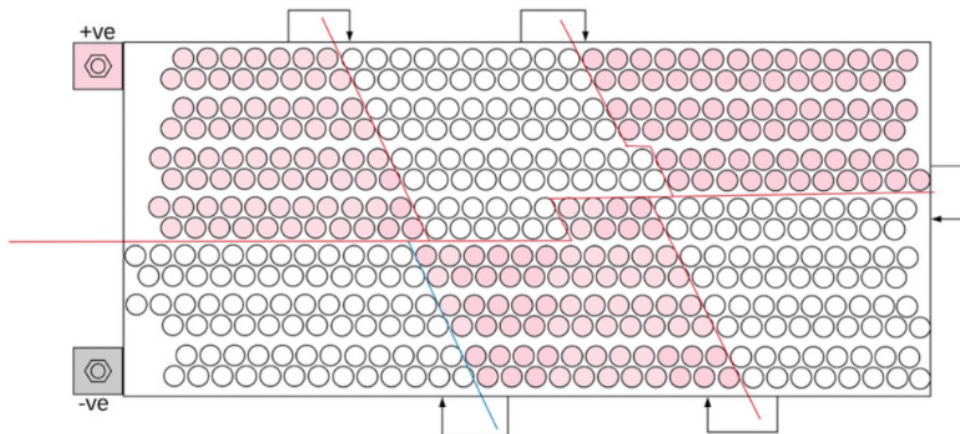
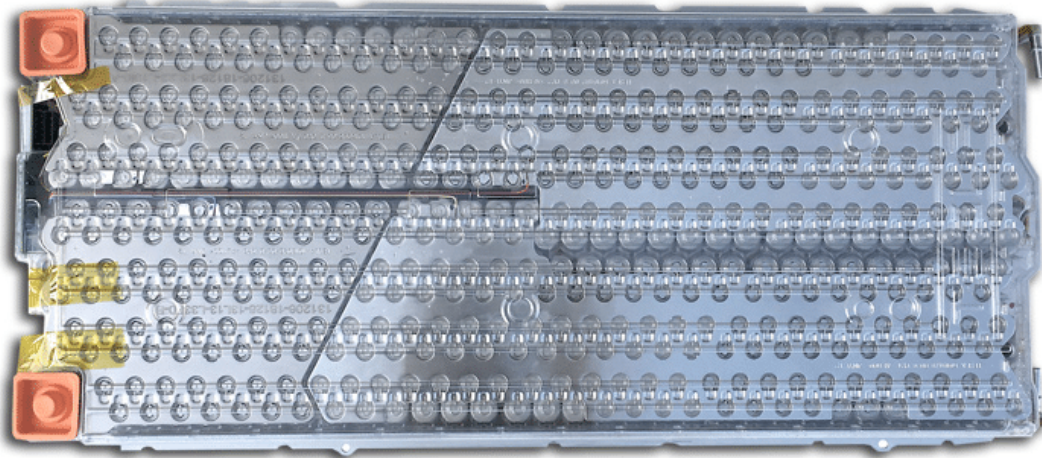


In class work w9d1 battery packs

- a) A 600 kWh battery is needed for 10 h of energy storage on a UO building to help eliminate grid electricity use. The cells available have an open-circuit potential of 3.5 V, a nominal capacity of 1 kWh (C/10 rate), and an internal resistance of 2 m Ω . R_w is equal to 0.75m Ω . Compare the nominal voltage, nominal current, and maximum power for three configurations (10S-60P), (30S-20P), (100S-6P).
- b) Below is a picture of a ~ 5 kWh module from a Tesla Model S battery pack (16 total are in the Model S pack). Can you discuss how the cells are wired? Can you see how the engineers achieved that wiring in the physical cell? If each cell is 3.8 V, what is the module voltage?



Tesla Model S, 74p6s Battery Module Cell Stacking Arrangement (Note: red cells indicate +ve side up)

here is the entire battery pack with 16 modules.

