

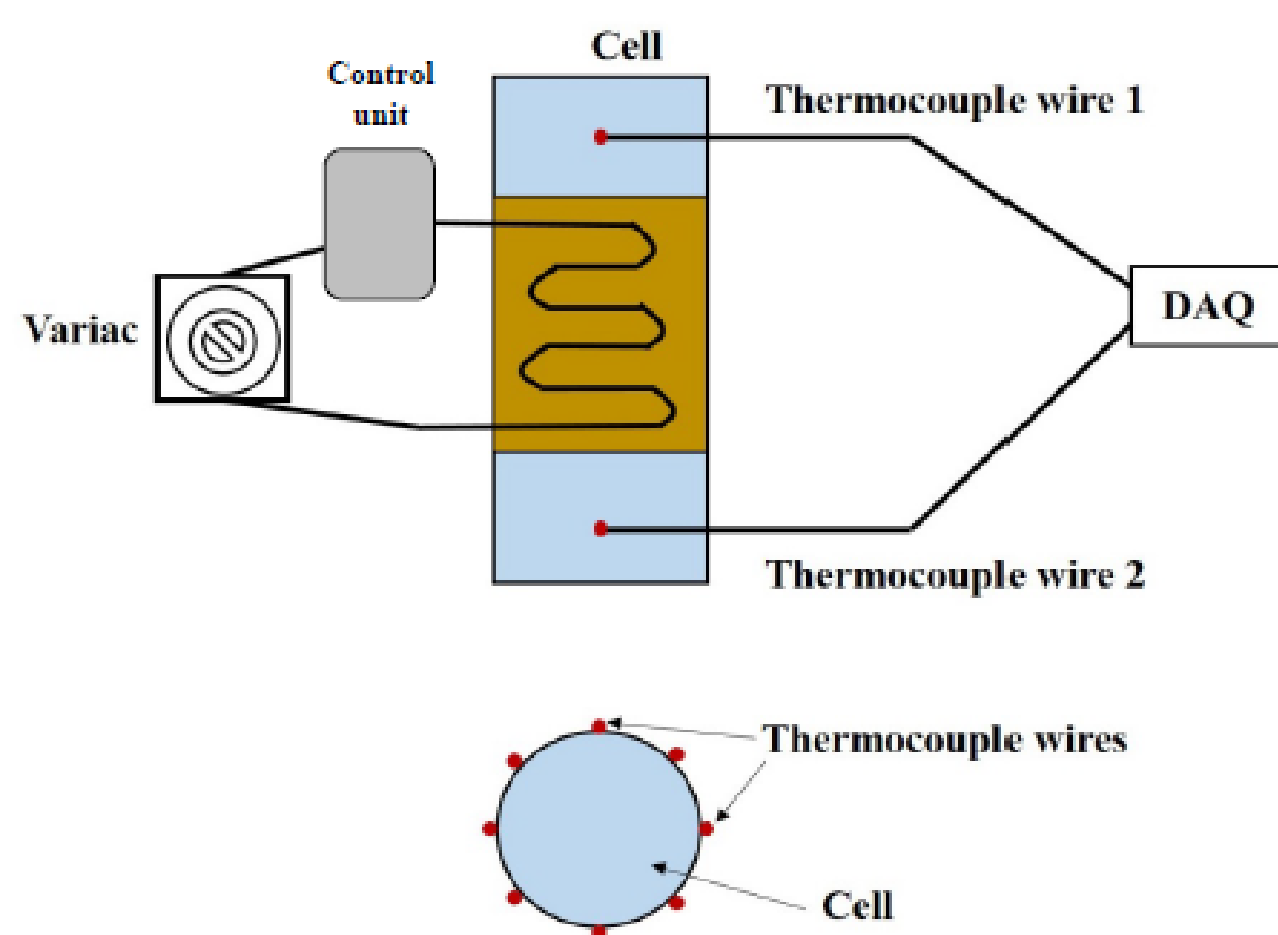
Thermal Management and Safety of batteries for emerging Applications

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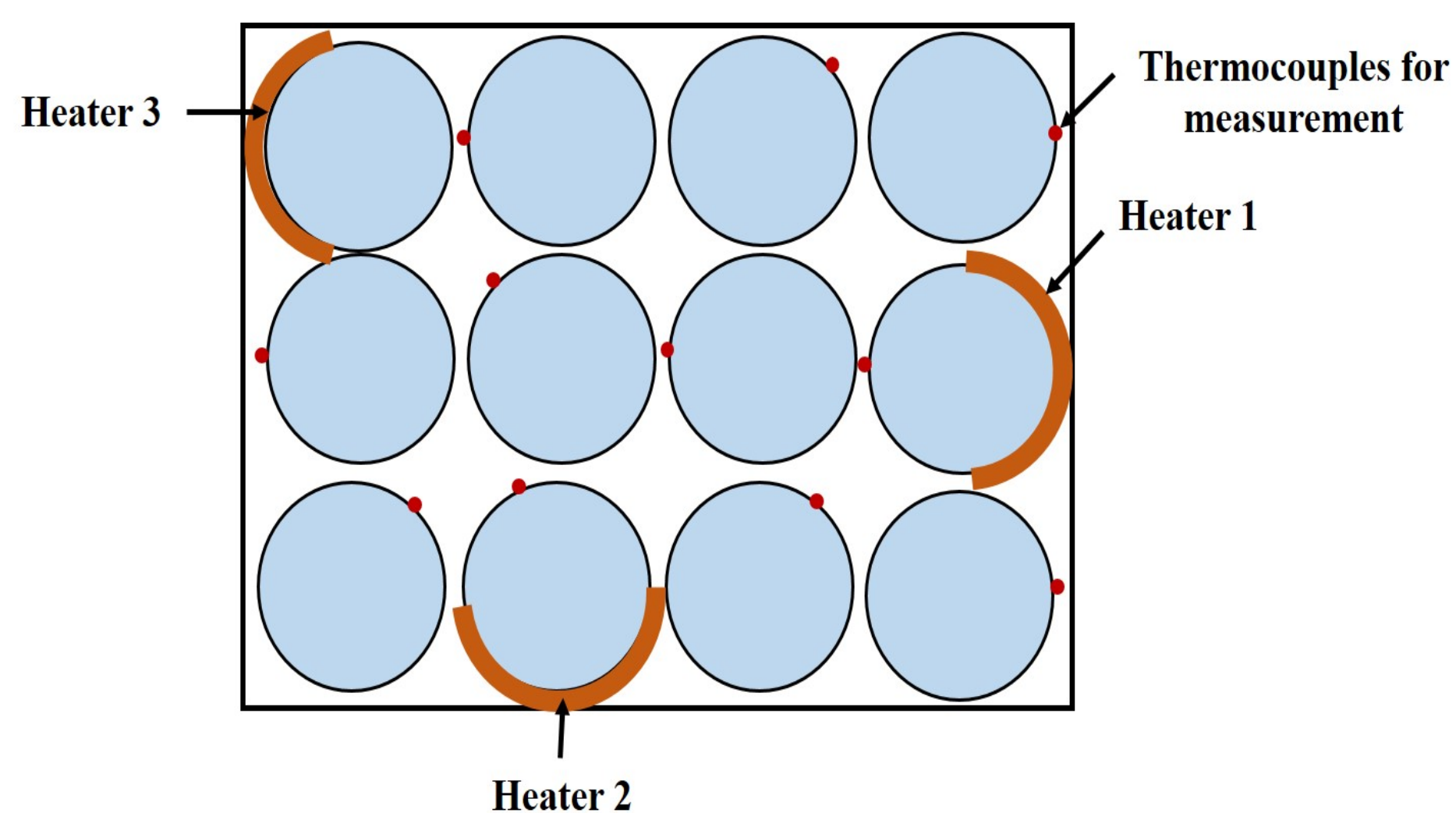


- Thermal Runaway testing of batteries
- Conduction & Convection Heat Transfer analysis
- Phase Change Cooling solutions of Energy storage devices for different applications

Methodology



Single battery cell thermal runaway test



Battery pack thermal runaway test

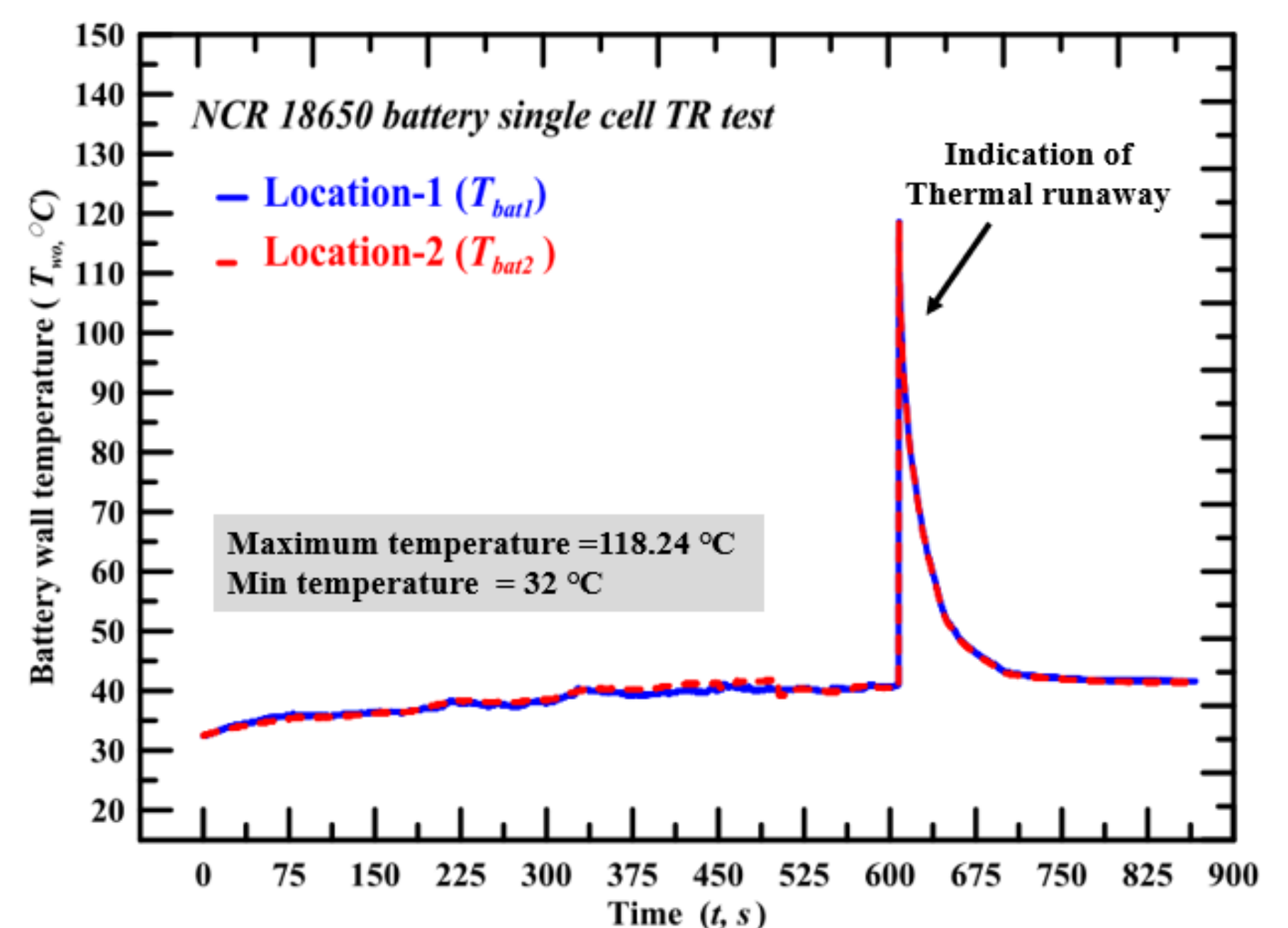
Results



Before Thermal Runaway Test



After Thermal Runaway Test



- ✓ Design & development of methodology to perform Thermal runaway tests up to hazardous level of explosion.
- ✓ As per EUCAR - European Council for Automotive Research and Development regulations tests are performed

- ✓ Commercially available NCR18650 single cell was made to undergo thermal runaway
- ✓ Battery was 100% charged and sufficient soaking time was provided. External heat load was provided by heater element is built in-house using Nichrome wire.
- ✓ At Thermal Runaway sudden rise and fall in battery temperature

