



Lead the World to Clean Mobility



The Products We Make and Sell



EV ARC™ (patented)

World's only transportable, solar-powered, permanent, EV charging solution

Generates and stores all its own power. Easy and rapid deployment.

Transportable but permanent

Networked



SOLAR TREE® (patented)

For Medium and Heavy-Duty Vehicles

Generates and stores all its own power. Easy and rapid deployment.

Networked



EV Standard™ (patented, in development)

Streetlight replacement, uses existing grid connection, solar and light wind generator. On board storage.

Provides meaningful curbside charging without heavy construction or electrical work.

Networked

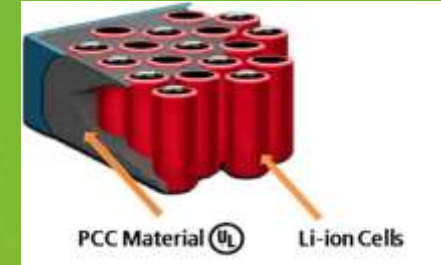


UAV ARC™ (patented, in development)

Drone recharger with solar, wind and storage

Generates and stores all its own power. Easy and rapid deployment.

Creates a network for charging and IoT fleet monitoring



Beam AllCell™ (multiple patents)

Bespoke storage solutions

Powers micro mobility, terrestrial EVs, aviation, maritime and recreational vehicles

Powers stationery and energy security applications

Beam AllCell™

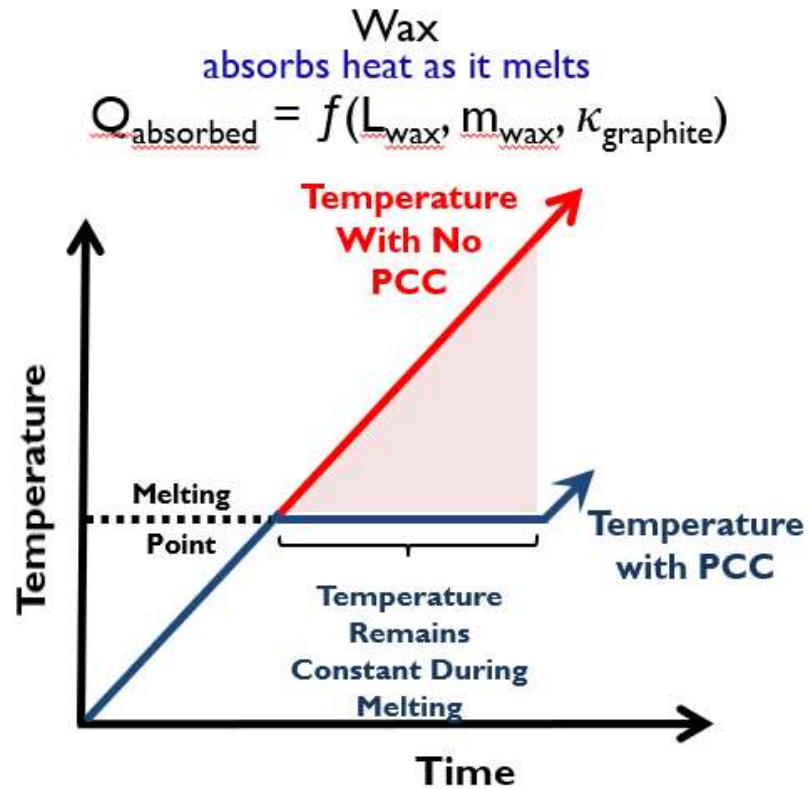
High Performance Energy Storage Solutions

- Highly flexible, scalable battery platform architecture
- Patented thermal management technology
- Battery pack formats optimized for each product's unique attributes
- Ideally suited where energy density, safety and bespoke enclosures require high power in small spaces
- Drones, aviation, maritime, recreational products and a host of micro mobility and EV products

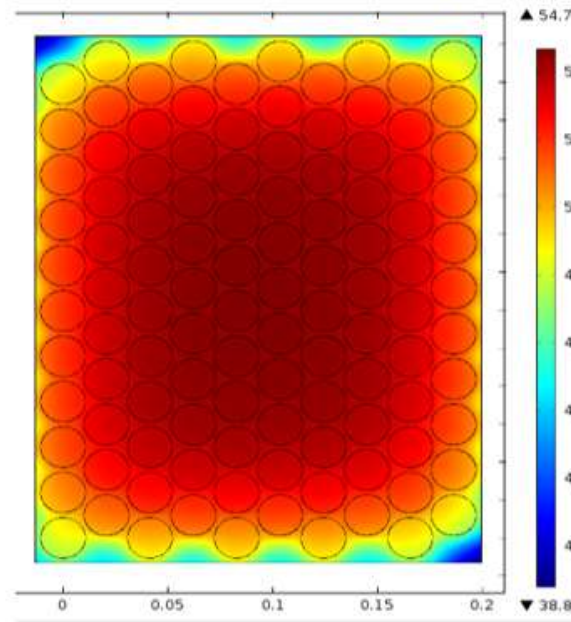


Introduction to Beam Global PCC™ Technology

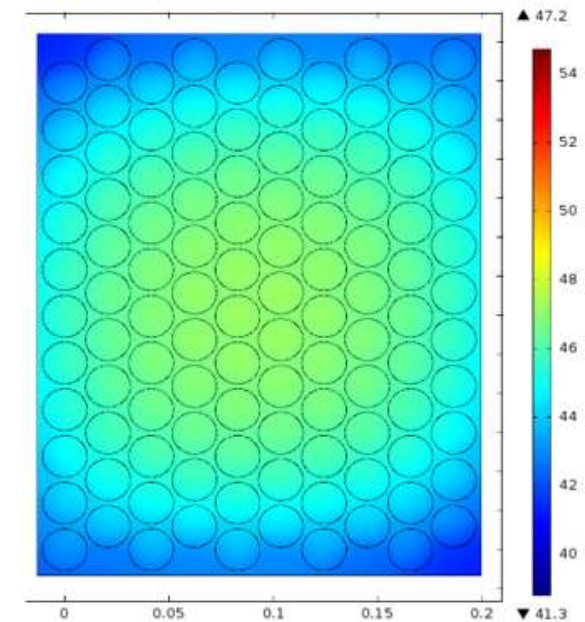
Beam's Phase Change Composite (PCC™) consists of a patented and proprietary engineered graphite matrix designed for rapid heat dispersion, and an encapsulated **wax**, to provide optimum heat absorption.



Graphite
distributes heat evenly – temperature gradient reduced by 50%, peak temperature reduced by 8°C



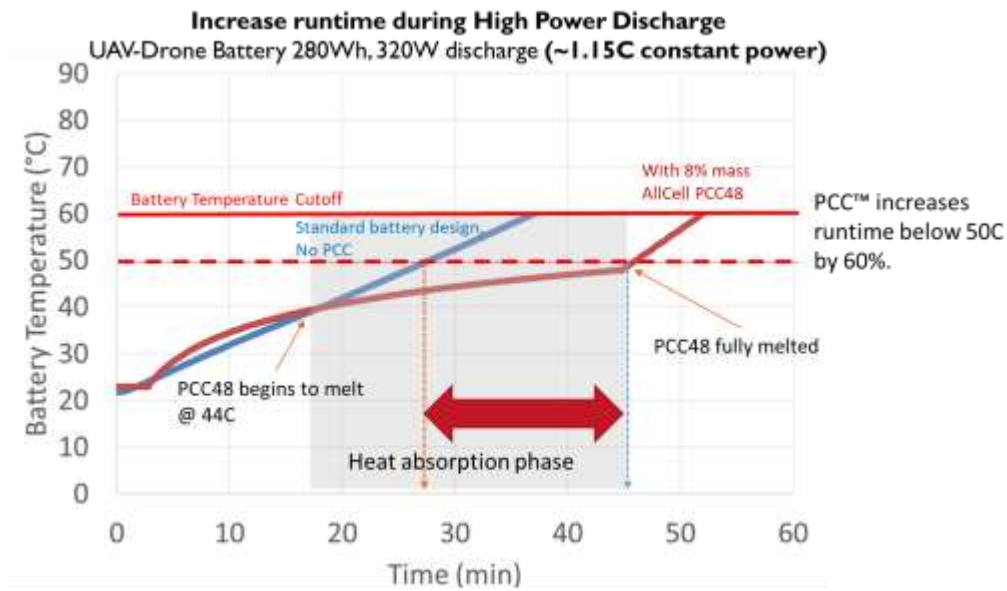
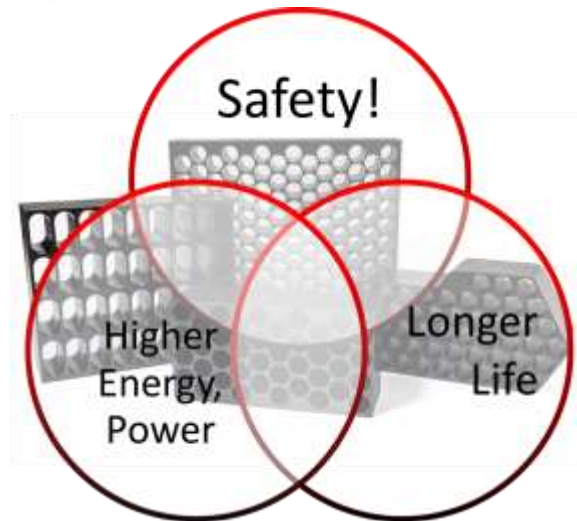
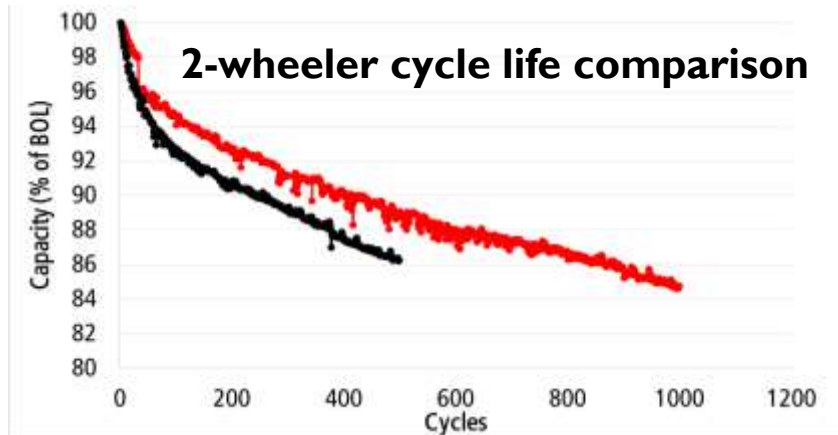
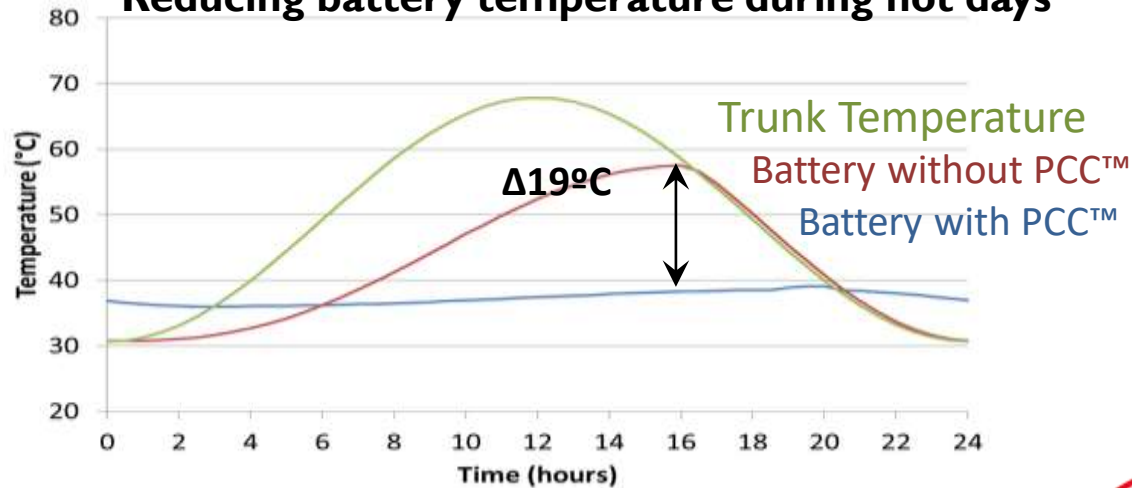
Pack temperature with
no thermal management



Cool pack temperature
with Beam PCC™

PCC™ Case Studies:

Reducing battery temperature during hot days



- Protects in hot environments
- Distributes and manages heat to improve cell life
- Enables use of high energy cells at a higher power
- Optimize size for customer use case
- Cost effective, especially for compact batteries
- No maintenance, no moving parts > reliability
- **Prevents thermal runaway propagation**

Thermal Runaway Misconceptions

- LFP is safe – No
- Solid-state is safe – No



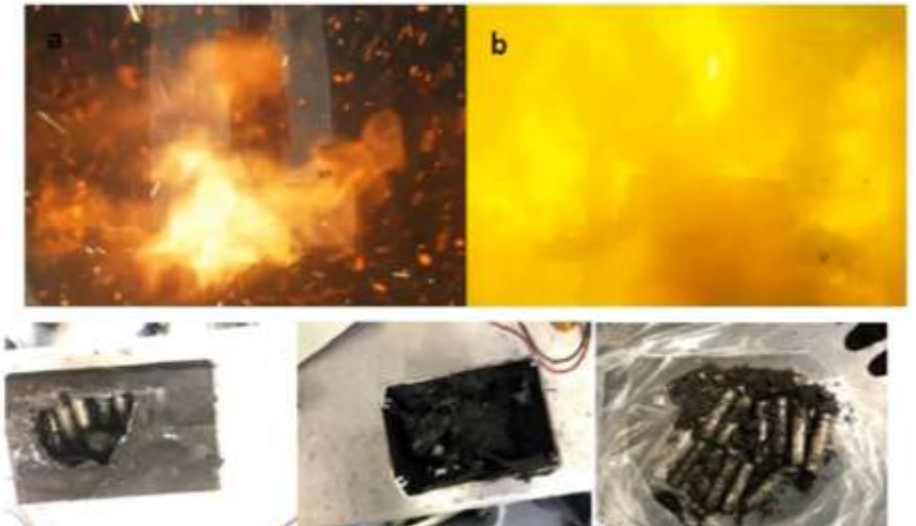
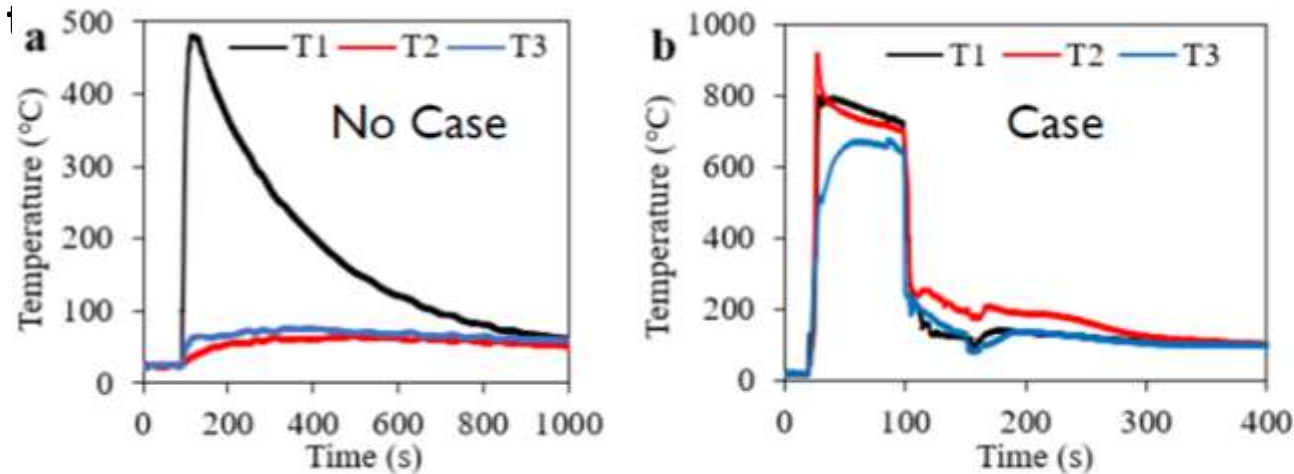
“Paris Suspends 149 Bolloré Electric Buses After Two Fires”

- LFP cathode
- Li metal anode
- Solid-state polymer electrolyte

“Tang EV electric bus fire in China”

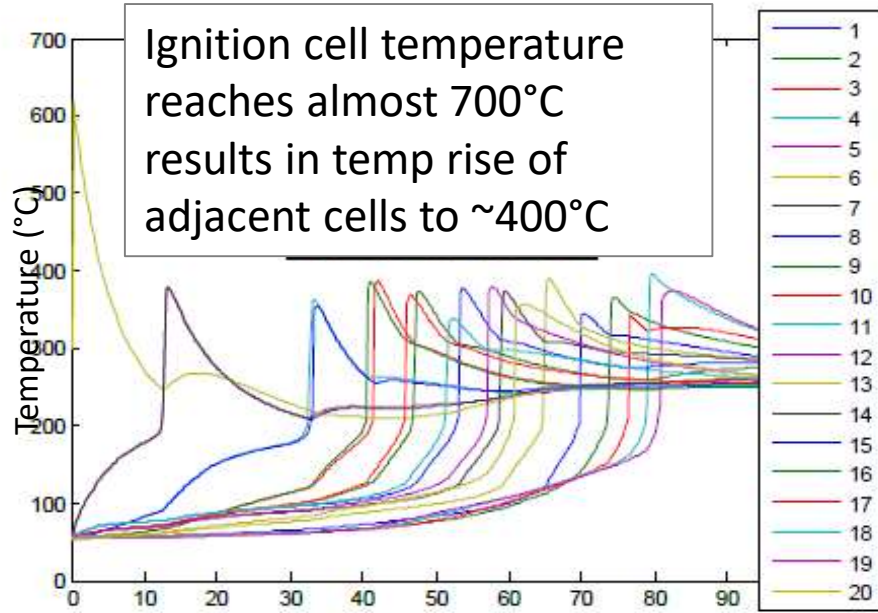
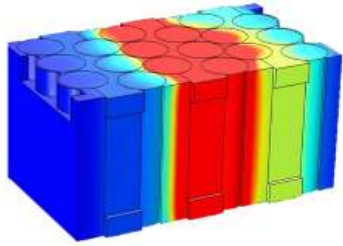
- BYD LFP batteries

- Check: Testing is performed “in application” condition – Air-only packs will not propagate in open-air

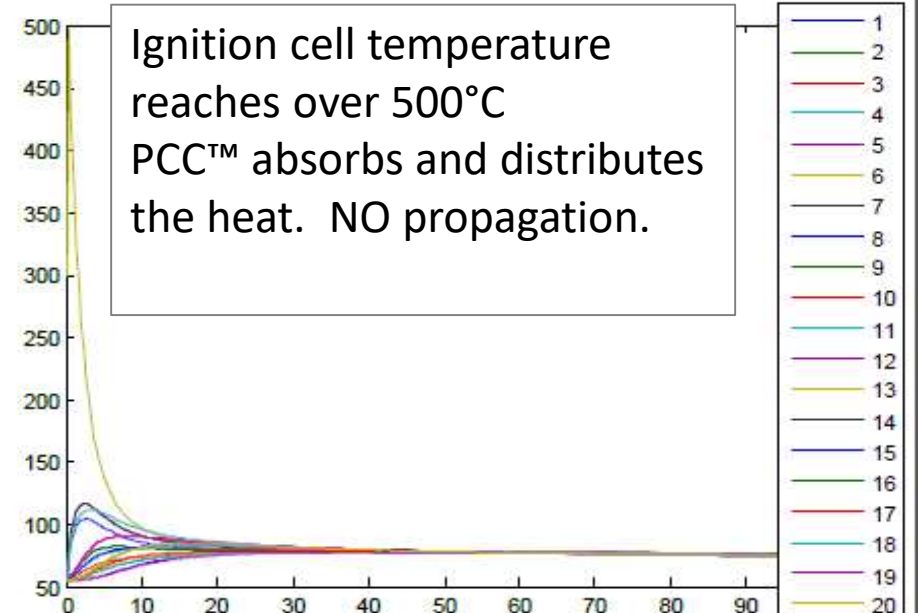
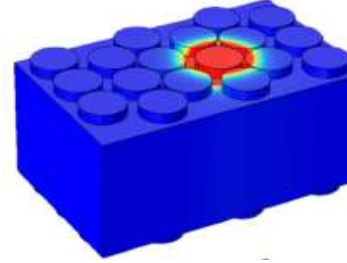


Preventing Thermal Runaway Propagation using PCC™

Standard Design



Design with Beam PCC™ material

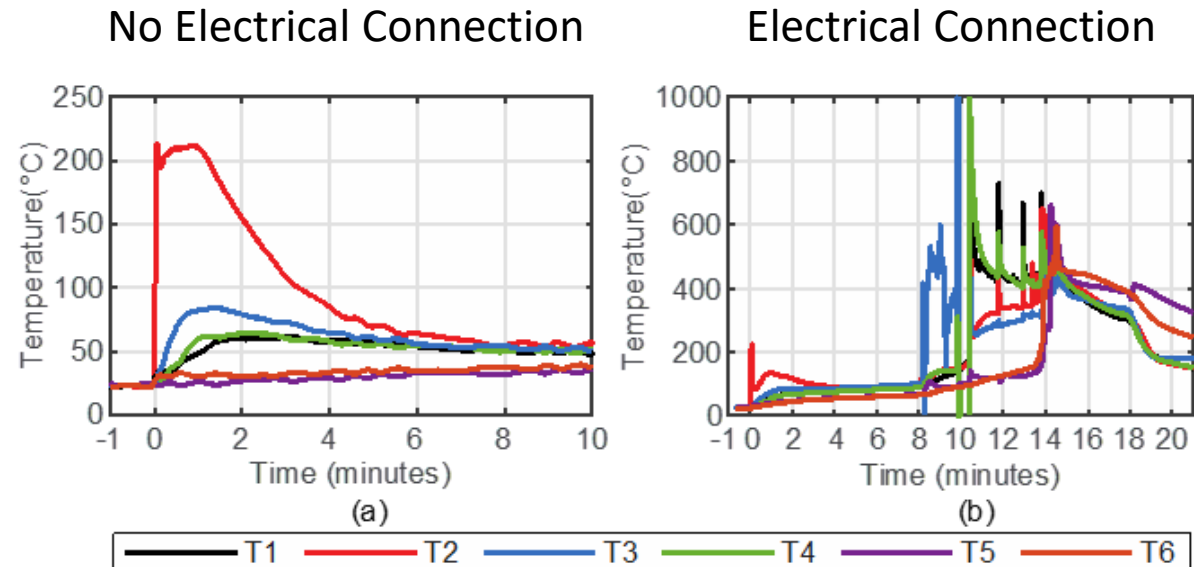


Thermal Runaway Safety Design Approach

- A holistic design and validation approach is essential to ensure a safe product which addresses the following

propagation root-causes:

- Thermal
 - Side-wall rupture
 - Hot gas/flame venting
 - Cell to cell heat conduction
- Electrical
 - Short-circuiting
 - Nail Penetration of 100% SOC 1s24p 18650 PCC Batteries with and without trigger cells electrically connected to neighboring cells





Thank you

Contact Beam

Learn more about Beam's products

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Visit: BeamForAll.com

