SDP22
Lecture 6
18 October 2021
Check-In 3 week &
Guest Alumnus
UMass Amherst Electrical and Computer Engineering Alumni & Friends

Listed group
42 days to MDR
Check-In 3

18 Oct - 22 Oct

- PDR feedback
- Team member progress reports
MDR
29 Nov – 3 Dec
42 days

○ A convincing demonstration of the critical aspects of the integrated system
○ MDR Deliverables achieved
Guest Alumnus
Jose LaSalle · 2nd
Product Management Engineer at Ventacity Systems
Corvallis, Oregon, United States · Contact info
HEMPAX™ is a regenerative technology company that produces patent-pending bio-materials for energy storage solutions.

Our core purpose is to provide economic renewable energy storage products that facilitate the world’s transition from the fossil fuel economy to a relocalized, resilient, and equitable economy with distributed, decentralized, and democratized energy systems.
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TEAM

Jose LaSalle | Co-Founder & CEO
Electrical Engineer • Product Development

Joe Hastry | Co-Founder & COO-CFO
CPA • MSA Tax Manager - PwC

Alex Nichols | Co-Founder & VP Engineering
Electrical, Computer Engineer • Entrepreneur

Diane Danielson | Business Advisor
COO • CMO • Attorney • Forbes 40 over 40

Brian Jing, PhD | Technology Advisor
PhD Materials Engineering UIUC

Nicolai Alexandrowski | Business Advisor
Entrepreneur • Circular Supply Chain

Arnab Majee, PhD | Technology Advisor
Post-Doc Fellow • Sandia National Lab

Walt Tracinski | Technology Advisor
Fmr. NASA Battery Engineer

Chris Johnson, PhD | Technology Advisor
Fmr. Boeing Battery Electrochemist

AFFILIATIONS

UW Seattle | Micro-Grid Simulation Testing
UMass Amherst | R&D and Pilot Manufacturing
Nordic Waves Group | Circular Economy
Winona’s Hemp & LIFT Economy | Supplier & Advisor
GenoVerde | Collaborator, Hemp Tester & Supplier
HEMPAX Addressable Market

- Facilitate Renewables Adoption
- Extend Battery Life by 2x
- Improve Grid Reliability

Wind Turbine Pitch Control
Solar Smoothing
Utility Distribution
Energy Buffer & Peak Shaving
Short-Term Power Supply
Power Quality & Frequency Response
EV Transport & Charging
HEMPAX Energy Storage Solution
Applications: Utility Distribution / Solar / Wind / Commercial / Industrial

HEMPAX UC Modules help utilities provide their customers with ancillary services that maximize reliability, save rate-payer electricity costs, extend LIB life by 2x, and embody social and environmental justice.
HEMPAX Energy Storage Solution
Applications: Utility Distribution / EV Charging / Transport

HEMPAX UC Modules help EV charging station installers provide their customers with maximum charging power by utilizing ancillary services that maximize power quality, grid stability, and embodies social and environmental justice.
HEMPAX Ultracapacitor
Physical Construction and Conceptual Operation

Current Collector
Hempaxium™
Separator + Electrolyte
Hempaxium™
Current Collector

Performance & Safety
- Cutting edge energy density
- Industry standard power density
- Non-flammable materials

Cost & Longevity
- Long product lifespan
- Competitive market cost
- Relocalized manufacturing

Regenerative & Circular
- Carbon-sequestering biomass
- Circular product life cycle
- Local economic development

Charge accumulation in embedded carbon structures
Market, Competitors, & Validators

**$7B**
Ultracapacitor Market by 2027  
[Source: Gordon Schenk, CEO UCAP]

**$47.4B**
Microgrid Market by 2025  
[Source: BoxPower]

**UK installs 5 MW ultracapacitor**
HEMPAX contributes to the well-being of the Earth and humanity with bio-based energy storage technology for the growing green energy economy.

**Provide** grid energy storage for 100% renewable energy

**Revitalize** inclusive regenerative agriculture and materials economies

**Embody** a circular energy-agricultural economy

**Create** fair-wage jobs in diverse local communities

**Reaffirm** respectful intergenerational relationship to land and life

**Facilitate** cleaner electrification of transportation
Thank you for your time
Appendix
Latest Prototype