Arceus Resources Holding Pte Ltd

Turning Glass Waste into High-Value Aerogel

SINGAPORE POLYTECHNIC SP

USS IEO
Urban Solutions & Sustainability Innovation & Enterprise Office

ATUM

visiongreen

Company Info

- Singapore startup incorporated in 2024
- Proprietary technology: upcycling glass waste into silica aerogel
- Partnerships across Asia, Europe & MENA
    - Company K, prominent distributor in Asia
    - Company S, listed on Nasdaq First North Growth Market
    - Company E, one of the largest aerogel supplier in Europe
    - Company R, Listed and a prominent insulation maker
    - Company N, biggest recycler in Rwanda
- Mission: enable greener, smarter, and more resilient buildings

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Technology Overview

- Waste glass processed into silica aerogel (TRL 6–7).
- Lightweight, nanoporous material.
- Cost reduction, higher productivity and sustainable manufacturing.
- Building insulation: high-performance thermal insulation for walls, roofs, and facades.
- Industrial insulation: Refineries and power plants where extreme thermal efficiency is needed.
- Automotive and EV batteries: thermal barriers and lightweight sound insulation.
- Apparel and outdoor gear: ultra-thin insulation in jackets, gloves, and boots.
- Paints and coatings: thermal-insulating, anti-corrosion, or anti-condensation additives.

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Why Aerogel from Waste Glass

- **Sustainability:** diverts glass waste, reduces landfill/incineration.
- **Performance potential:** insulation + fire safety + acoustic comfort.
- **Lightweight & versatile:** coatings, paints, panels, composites.
- **Resistance & durability:** reduces heat stress, moisture damage, and wear-and-tear on external façades → longer building lifespan, lower maintenance cost
- **Circular economy edge:** high-value material from waste.
- **Made in Singapore:** local innovation for global market.

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Applications in the Built Environment

- **Paint & Coating Companies**
  Add aerogel to your formulation to enhance thermal insulation, anti-condensation, and sound absorption.
- **Insulation Manufacturers**
  Use aerogel as a filler or panel core to achieve higher R-values and lighter-weight insulation systems.
- **Window & Façade Suppliers**
  Integrate aerogel panels or granules within glazing systems for transparent thermal insulation.
- **Precast & Concrete Producers**
  Blend aerogel into cementitious or plaster mixes to reduce weight and improve insulation performance.
- **Roofing & Waterproofing Companies**
  Incorporate aerogel into membranes or coatings to improve UV stability, waterproofing, and energy efficiency.
- **HVAC & Energy Efficiency Firms**
  Apply aerogel insulation in ducting, chillers, and piping to minimize heat loss and condensation.

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Collaborate with Us to Build Greener Cities

- **Industry pilots:** building owners, paint suppliers, contractors
- **Tech collaboration:** R&D partners, universities, material companies
- **Circular economy:** Supply chain leaders
- **Pilot Plant Timeline:** 2026 (100kg/day) → scale-up after

Special Thanks

Dr Li Xiao Dong, Singapore Poly

Mr Cedric Yon, USS IEO

Mr Thomas Wong, Arceus

Join us on this journey!
Thank you

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