# Homerun Resources Inc. Achieves Breakthrough in Silicon Carbide Synthesis with UC Davis, Leveraging Brazilian High-Purity Silica & Graphite Resources

written by Raj Shah | July 8, 2025

July 8, 2025 (Source) – **Homerun Resources Inc. (TSXV: HMR) (OTCQB: HMRFF) ("Homerun" or the "Company")** is very pleased to announce that our research partners at UC Davis Materials Science and Engineering have successfully synthesized Silicon Carbide (SiC) with proprietary methods involving electrically generated heat and energy using Homerun's raw Belmonte silica sand and Bahia Graphite Corporations (BGC) raw graphite from Bahia, Brazil.

Silicon Carbide is a critical material in modern industries, prized for its exceptional hardness, thermal stability, and semiconductor properties used in electric vehicle powertrains, renewable energy systems and 5G infrastructure and industrial robotics. By having access to both high-purity silica sand ($SiO_2$) and graphite (C) from nearby Brazilian deposits, Homerun bypasses supply chain vulnerabilities that are currently affecting global SiC producers. The Acheson process, used for the great majority of commercial SiC, requires precisely these inputs.

The journey from raw materials to functional SiC components involve two distinct phases: synthesis and final product

manufacturing. While synthesis focuses on producing the base material, final product manufacturing tailors its structure and properties for specific applications.

**Further milestones from the continuing R&D Program for 2025, are as follows:**

| Silicon Carbide – R&D Phase | Milestones to the End of 2025 |
|---|---|
| **Phase 1: Synthesis to Silicon Carbide** | **Achieved** in first half of 2025 |
| **Phase 2: Pre-Treatment & Densification** | **Sintering** to densify the mixture & optimize for thermal conductivity and porosity |
| **Phase 3: Laser Synthesis** | **Perform laser irradiation** in order to tune parameters (wavelength, power, scan rate) for phase formation |
| **Phase 4: Material Characterization** | **XRD, SEM, Raman** to confirm SiC phase and structure and compare with known β-SiC and α-SiC standards |
| **Phase 5: Optimization & Scaling** | **Repeat synthesis** to improve yield, purity, and crystal structure and begin scale-up feasibility assessment |
| **Phase 6: Application Testing** | **Electrical/thermal performance tests** to begin development of integration into device prototypes |

Brian Leeners, CEO of Homerun stated, “We extend our gratitude to the UC Davis Materials and Engineering team for achieving this pivotal milestone in our strategic mission to develop innovative processing methods for advanced materials. Global critical material supply chains face increasing pressures, including competition with former suppliers. To succeed, we must pioneer cost-effective technologies that align with clean energy

principles. Our collaboration with UC Davis continues to deliver groundbreaking solutions, now combining Homerun's high-purity silica and Bahia Graphite's premium graphite to redefine industry standards."

**About Homerun** (www.homerunresources.com)

Homerun (TSXV: HMR) is a vertically integrated materials leader revolutionizing green energy solutions through advanced silica technologies. As an emerging force outside of China for high-purity quartz (HPQ) silica innovation, the Company controls the full industrial vertical from raw material extraction to cutting-edge solar, battery and energy storage solutions. Our dual-engine vertical integration strategy combines:

**Homerun Advanced Materials**

- Utilizing Homerun's robust supply of high purity silica sand and quartz silica materials to facilitate domestic and international sales of processed silica through the development of a 120,000 tpy processing plant.
- Pioneering zero-waste thermoelectric purification and advanced materials processing technologies with University of California – Davis.

**Homerun Energy Solutions**

- Building Latin America's first dedicated high-efficiency, 365,000 tpy solar glass manufacturing facility and pioneering new solar technologies based on years of experience as an industry leader in developing photovoltaic technologies with a specialization in perovskite photovoltaics.
- European leader in the marketing, distribution and sales

of alternative energy solutions into the commercial and industrial segments (B2B).
- Commercializing Artificial Intelligence (AI) Energy Management and Control System Solutions (hardware and software) for energy capture, energy storage and efficient energy use.
- Partnering with U.S. Dept. of Energy/NREL on the development of the Enduring long-duration energy storage system utilizing the Company's high-purity silica sand for industrial heat and electricity arbitrage and complementary silica purification.

With six profit centers built within the vertical strategy and all gaining economic advantage utilizing the Company's HPQ silica, across, solar, battery and energy storage solutions, Homerun is positioned to capitalize on high-growth global energy transition markets. The 3-phase development plan has achieved all key milestones in a timely manner, including government partnerships, scalable logistical market access, and breakthrough IP in advanced materials processing and energy solutions.

Homerun maintains an uncompromising commitment to ESG principles, deploying the cleanest and most sustainable production technologies across all operations while benefiting the people in the communities where the Company operates. As we advance revenue generation and vertical integration in 2025, the Company continues to deliver shareholder value through strategic execution within the unstoppable global energy transition.

**On behalf of the Board of Directors of**
**Homerun Resources Inc.**

**"Brian Leeners"**

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