# Dossier: BIOMASON INC.

## SBIR Award Details

**Award Title:** N/A

**Amount:** $1,899,859.79

**Award Date:** 2023-11-30

**Branch:** ARMY

## AI-Generated Intelligence Summary

**Company Overview:**

BioMason, Inc. is a biotechnology company pioneering the production of sustainable, bio-based cement alternatives. Their primary business revolves around utilizing microorganisms – specifically, bacteria – to naturally create a biomineralized cement. Their core mission is to decarbonize the construction industry by offering a replacement for traditional Portland cement, a significant contributor to global carbon emissions. They aim to solve the problem of the cement industry's massive environmental impact, which accounts for roughly 8% of global CO2 emissions, through a process that eliminates the need for high-temperature kilns and reduces reliance on resource-intensive mining. BioMason's unique value proposition lies in its ability to produce structural materials with significantly lower carbon footprints, leveraging natural biological processes to create strong, durable, and potentially self-healing concrete alternatives.

**Technology Focus:**

* Microbial Cementation:\*\* BioMason utilizes a patented bio-cementation process where microorganisms are introduced into a growth medium containing aggregate (sand, gravel, recycled materials) and other nutrients. These bacteria precipitate calcium carbonate (CaCO3) crystals, essentially "gluing" the aggregate particles together and forming a durable, cement-like material.
* BioLytic™ Technology:\*\* BioMason's proprietary technology uses the bacteria \*Bacillus subtilis\* to produce calcium carbonate through a urea hydrolysis process. This process converts urea (sourced from waste streams) into ammonia and carbonate ions, which then react with calcium ions to form CaCO3. The process is conducted at ambient temperatures, drastically reducing energy consumption.

**Recent Developments & Traction:**

* Partnership with National Cement Company (2022):\*\* BioMason announced a partnership with National Cement Company, the largest cement manufacturer in Puerto Rico, to produce and sell sustainable, bio-based cement across the island. This partnership signals a significant step towards commercial scalability.
* Grant Funding from the US Department of Energy (2023):\*\* BioMason secured a grant from the U.S. Department of Energy's Advanced Research Projects Agency-Energy (ARPA-E) to further develop their bio-based cement technology and improve its performance characteristics. Specific details of the grant amount are not publically available.
* Project BioCrete (Ongoing):\*\* BioMason has actively participated in the "Project BioCrete," a research effort focused on using microbial carbonate precipitation for construction purposes. This highlights their continued engagement in advancing bioconcrete research and development.

**Leadership & Team:**

* Ginger Krieg Dosier (CEO & Co-Founder):\*\* An architect with a background in sustainable design and extensive research into biomimicry and biomineralization. Her expertise lies in translating scientific principles into practical, scalable solutions for the construction industry.
* Michael (Mick) Dosier (President & Co-Founder):\*\* An experienced entrepreneur with a background in business development and strategy. His experience is crucial for scaling the business and establishing partnerships.

**Competitive Landscape:**

* Solidia Technologies:\*\* Develops a cement production process that uses less limestone and cures with CO2, resulting in a lower carbon footprint than traditional Portland cement. BioMason's key differentiator is its use of biological processes for cementation, completely avoiding the need for high-temperature kilns required by Solidia Technologies.
* CarbonCure Technologies:\*\* Injects captured CO2 into concrete during the mixing process, permanently sequestering the CO2 and strengthening the concrete. While CarbonCure focuses on carbon sequestration within existing concrete production processes, BioMason offers a more radical alternative by completely replacing Portland cement with a biologically derived material.

**Sources:**

1. [https://www.biomason.com/](https://www.biomason.com/)

2. [https://www.prnewswire.com/news-releases/national-cement-company-to-manufacture-and-sell-biomasons-sustainable-cement-301651787.html](https://www.prnewswire.com/news-releases/national-cement-company-to-manufacture-and-sell-biomasons-sustainable-cement-301651787.html)

3. [https://arpa-e.energy.gov/](https://arpa-e.energy.gov/) (Search for BioMason to find relevant grant information)

4. [https://www.nist.gov/news-events/news/2013/03/nist-collaborates-self-healing-concrete-made-bacteria](https://www.nist.gov/news-events/news/2013/03/nist-collaborates-self-healing-concrete-made-bacteria) (Background on Biocrete project)