

# RSC Sustainability

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Fundamental questions  
Elemental answers





**Showcasing research from Professor Allam's laboratory,  
School of Sciences and Engineering, The American  
University in Cairo, Egypt.**

**Electrochemical catalysis for the production of green  
cement: towards decarbonizing the cement industry**

Among the most significant sources of CO<sub>2</sub> emissions, cement manufacturing contributes 8% of such emissions worldwide. To reduce CO<sub>2</sub> emissions during cement manufacturing, alternative fuels, binders, and renewable energy sources should be utilized to achieve carbon neutrality. To this end, electrochemical production of cement has emerged as a compelling and environmentally friendly method to address the risks associated with conventional cement production. This review presents a roadmap towards the electrochemical production of green cement and the challenges that need to be addressed.

**As featured in:**



See Nageh K. Allam *et al.*,  
*Catal. Sci. Technol.*, 2024, **14**, 4087.