

Sundar Chithiraputhiran

Associate

Mr. Chithiraputhiran has nearly 15 years of professional experience in the building materials and construction industry with a focus on research, development, and commercialization of products and technical consulting. He has developed and commercialized products for road repair, flooring, and structural applications and is a coinventor on multiple patents. Additionally, he has provided solutions across a wide range of engineering challenges, performing root cause analysis, material characterization, and performance evaluation. His subject matter expertise includes, but is not limited to, cement, concrete, gypsum, lime, and supplementary cementitious materials (fly ash, slag, metakaolin, etc.).

Prior to joining CTLGroup, Mr. Chithiraputhiran held positions as a Senior Researcher for a leading building materials manufacturing company in their research and development center. He also has experience working as a Project Engineer on a heavy construction project for 2 years. At CTLGroup he is a recognized authority in coal ash, lime, and gypsum.

Patents and Developments

Inventor on Three Patents

- Patent No: US 9,624,131 B1 Date of Patent: Apr. 18, 2017 – Patent Issued
- Patent No: US 10,308,552 B2 Date of Patent: June. 04, 2019 – Patent Issued
- Patent No: US 11,021,391 B2 Date of Patent: June. 01, 2021 – Patent Issue

Representative Experience

- Investigated and developed concepts for fifth generation (5G) DUROCK® Cement Board.
- Explored ideas for waterproof cement board and demonstrated commercial viability of the product.
- Coordinated scrim weave reduction in USG DUROCK® Brand Cement Board with Edge Guard products which aided in cost savings of \$100K per year for USG.
- Formulated and developed geopolymer based self-consolidating concrete per ACI 237R-07.
- Developed advanced testing methods to characterize the mechanical and durability performance of geopolymer based products for infrastructure and flooring applications.
- Provided formulation, testing expertise and support to business and sales team for the developed products.
- Formulated and developed geopolymer based road repair products per NTPEP RSCP 02-16 and conduct
- Department of Transportation (DOT) bridge deck field trials for Qualified Product List (QPL) approvals.



Academic Credentials

M.S. in Civil, Environmental & Sustainable Engineering
Arizona State University (ASU),
Tempe, AZ, 2012

B.S. in Engineering (Hons.) in Civil Engineering
Birla Institute of Tech & Science,
Pilani, India, 2008

Professional Affiliations

American Concrete Institute

International Concrete Repair Institute

ASTM International

National Transportation Product Evaluation Program (NTPEP)

RILEM

Contact Information

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- Designed and conducted Non-Destructive Testing (NDT) and durability evaluation of geopolymer based materials using ASTM C666, C215, C672, C1202, C1583, C1543 and shrinkage using embedded strain gauges.
- Managed laboratory and provided supervision for technical staff tasked with conducting bench level experiments to quantify, strength, workability, rheology, and air content.
- Developed, optimized, and standardized manufacturing processes and QA/QC procedures to commercially produce dry packaged road repair products meeting ASTM C928 specification.
- Compiled research reports, memos and presentations for proposals, project status, procedures, data analysis, conclusions, and recommendations.

Professional Development and Leadership

- Member of “RILEM TC 247-DTA”. Contributed to round robin testing and findings via three research papers. Mix design and reproducibility of compressive strength of AAC; Carbonation and chloride testing of AAC; Sulfate resistance, alkali-silica reaction and Freeze-Thaw resistance of AAC
- Member of International Concrete Repair Institute (ICRI), “American Concrete Institute (ACI)” & “American Society for Testing & Materials (ASTM) International.
- Served as a member of NTPEP Rapid Set Concrete Patch Materials (RSCP) technical committee.
- Served as a chairperson of the safety committee at USG Corporate Innovation Center (CIC).
- Council Member, USG Diversity & Inclusion Strategy Council (DISC).