Proposal for Conduct of a Research-Oriented Internship Program

Project Title:	Amendment of Bauxite Residue with Calcium Carbide Residue in the Presence of Phosphoric Acid for Sustainable Resource Utilization and Environmental Remediation
Faculty:	Dr. P Sreekanth Reddy, Assistant Professor
Department:	Civil Engineering
Contact details:	sreekanth2648@acharya.ac.in
Duration	1 month
Internship:	Paid internship of 5000/-
Preferred Discipline:	Civil/ Allied engineering branches
Eligibility:	Students who have completed at least the 2nd year of UG program. Basic knowledge of materials characterization and environmental science is desirable. No Backlogs with minimum CGPA of 6
Background:	Bauxite residue (BR), generated during alumina extraction through the Bayer process, represents one of the largest industrial solid waste streams worldwide. Its highly alkaline nature, fine particle size, and trace metal content pose significant environmental and disposal challenges. Calcium carbide residue (CCR), another industrial by-product generated during acetylene gas production, is predominantly composed of calcium hydroxide and possesses high alkalinity. Improper disposal of CCR may adversely affect soil and water quality, thereby demanding environmentally responsible utilization approaches. Recent advances in waste valorization research have demonstrated that chemical amendment and stabilization of industrial residues using calcium-rich additives and phosphate-based modifiers can substantially improve physicochemical characteristics, reduce environmental risks, and enhance the potential for beneficial reuse. In this context, the proposed internship program is designed to provide students with rigorous research exposure and advanced laboratory training in the domain of industrial waste utilization, sustainable material development, environmental remediation, and circular economy practices.
Objectives:	To investigate the physicochemical and mineralogical characteristics of bauxite residue and calcium carbide residue. To examine the influence of phosphoric acid on amendment reactions and stabilization mechanisms. To evaluate structural, compositional, and morphological changes occurring during the treatment process. To train students in modern characterization techniques and experimental methodologies. To encourage interdisciplinary research and innovation in environmental sustainability.

Outcome:	The internship shall serve as a platform for integrating theoretical knowledge with hands-on experimentation, analytical characterization, data interpretation, and scientific reporting. The program is expected to enhance research aptitude among students while simultaneously contributing to ongoing departmental research activities and institutional research output.
Deadline:	05-06-2026
Mode of application:	Applicants may send their interest through mail provided with their area of interest and CV. The selected students will be intimated through mail

Faculty Coordinator

HOD

H.O.D.
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Note :- online form to be created :- a) Name b) USN c) Department for students (submission) d) Institute Name e) cv attachment (2MB) f) Marks card attachment (2MB)

- once the link is created do share the link and soft copy of proposal on call for Internship Program - 2026. (adr@acharya.ac.in)

2026-05-20.

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