National Institute of Technology Rourkela

Departmental Seminar

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| Seminar Title | : Conference Return Seminar: SMALL AND LARGE STRAIN SHEAR MODULUS OF FLY ASH |
| Speaker | : Abhishek Suman |
| Supervisor | : Dr. M. Gattu |
| Venue | : CE Seminar Hall |
| Date and Time | : 08 Jan 2025 (11:40 am) |
| Abstract | : Fly ash, a by-product of coal combustion is produced in significant quantities in India. The geotechnical properties of fly ash are being studied for its potential use as a sustainable construction material. This study investigates the shear modulus of fly ash at both small and large strain levels. The small strain shear modulus is crucial for evaluating the stiffness of fly ash at very low strains, while the large strain shear modulus is significant for the material's response under large deformation. Fly ash samples were subjected to a series of laboratory tests, including a bender element test for small strain shear modulus and cyclic triaxial tests for large strain shear modulus. The effects of various conditions such as confining pressure, strain amplitude, relative density, and loading frequency are also investigated. For bender element studies, frequencies of 10, 12.5, and 15 kHz, confining pressures of 50, 75, and 100 kPa, and relative densities of 50% and 70% are used. For cyclic triaxial tests, frequencies of 0.5 and 1 Hz, the same confining pressures and relative densities, and strains of 0.05%, 0.1%, and 0.2% are considered. |