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Departmental Seminar

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Seminar Title	: Recycling of polished tile waste in ceramic full-body vitrified tiles
Speaker	: Khodidas Govindbhai Kundariya
Supervisor	: Prof. Sunipa Bhattacharyya
Venue	: CR Department Seminar Hall
Date and Time	: 10 Sep 2025 (11 am)
Abstract	: The fabrication of ceramic full-body vitrified tiles can be innovatively achieved by recycling polished tile waste, which presents a significant disposal challenge for the industry. By incorporating this waste material into the tile manufacturing process, it is possible to partially substitute feldspar, quartz or clat with polished tile waste. This eco-friendly approach not only mitigates land pollution but also reduces production costs due to the use of local raw materials. The experimental compositions were formulated by adding varying proportions of tile waste at 5%, 10%, 15%, 20% and 25%, replacing equivalent amounts from either feldspar, quartz or clay in the standard full body vitrified tile composition. Throughout the fabrication process, meticulous attention was given to ensure that there was no compromise in vitrification or other essential properties of the tiles. Remarkably, the water absorption and strength of the tiles produced using this method were comparable to the standard tile composition that does not utilise polished tile waste. Further analyses of the microstructure and phase composition were conducted using field emission scanning electron microscopy (FESEM) and powder X-ray diffraction (XRD) techniques, confirming the viability of this sustainable and cost-effective approach.