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Title: SUPERHYDROPHOBICITY, UV PROTECTION AND OIL/WATER SEPARATION PROPERTIES OF FLY ASH/TRIMETHOXY(OCTADECYL)SILANE COATED COTTON FABRICS

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**SUPERHYDROPHOBICITY, UV PROTECTION AND OIL/WATER SEPARATION
PROPERTIES OF FLY ASH/TRIMETHOXY(OCTADECYL)SILANE COATED
COTTON FABRICS**

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Highlights

- Mechanically activated the fly ash particles by ball milling process.
- 3 wt% fly ash coated cotton fabric exhibited 0.11% transmission in UV-region.
- Superhydrophobization of fly ash coated cotton fabrics by OTMS coating.
- 3 wt% fly ash-OTMS coated cotton fabric exhibited 153° contact angle.
- 3 wt% fly ash-OTMS coating depicted 3300% oil (i.e. chloroform) absorption capacity.

ABSTRACT

The presented study proposed simple and low-cost approach for improvement in UV protection and superhydrophobic properties of cotton fabrics by coating of mechanically activated fly ash particles. The maximum UV blocking was observed for 3 wt% fly ash, where

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