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## Characterization of raw and alkali treated new natural cellulosic fiber from *Coccinia grandis.L*

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### Highlights

- Relatively high crystallinity index (57.64 %) was found in alkali treated *Coccinia grandis.L* fiber.
- TGA analysis shows that the alkali treated GCFs are thermally stable until 220.6 °C.
- Low density of raw (1243±22.64 Kg/m<sup>3</sup>) and alkali treated CGFs (1468±34.32Kg/m<sup>3</sup>) promotes the light weight applications
- Raw (273±27.74 MPa) and alkali treated CGFs (316.3±36.63 MPa) have better tensile strength.
- This research qualifies GCF as possible reinforcement in composite materials.

### Abstract

The physical, chemical, tensile, crystalline, thermal, and surface morphological properties of raw and alkali treated *Coccinia Grandis.L* Fibers (CGFs) were characterized for the first time in this work. The results of the chemical analysis indicate that, after alkali treatment, the

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