Topic: RA abstracts

Task

- In groups of 2-3, study the following abstract and discuss:
  - The function of each sentence.
  - The tenses used for each of the functions.

Title: A sustainable approach for the utilization of PPE biomedical waste in the construction sector.

Authors: H. T. Mohan, K. Jayanarayanan and K. M. Mini

Journal: Engineering Science and Technology

One of the major challenges the COVID-19 pandemic has posed is the disposal of huge volumes of biomedical waste. It is the need of the hour to find out methods to handle the waste generated and explore novel and sustainable ways for their disposal. Personal Protective Equipment (PPE) is the main medical waste generated during the pandemic and may continue to accumulate in the post-pandemic era. This paper portrays a study on generating construction material composites from PPE waste along with the sand fillers. The work has been carried out with two different sand, River sand and Manufactured sand, in three different filler ratios. The different properties such as tensile, compression, and flexural strength of the prepared composite are detailed and compared with the existing construction materials. Durability properties such as acid resistance and moisture absorption have been studied to validate the efficacy of the developed material in the construction sector. It is observed that the PPE waste composite displays superior performance in compression, tension and flexure compared to other construction materials such as mud bricks and cement blocks. The water absorption and acid degradation are minimal and, as a result, its strength is not affected after exposure to such adverse conditions. The thermal conductivity of the composite is found to be less compared to the conventional concrete, which makes it an ideal choice in tropical areas as thermal insulation material. This study is expected to set a new sustainable approach to utilizing biomedical plastics waste to substitute cement-based construction material and hence aid a negative carbon cycle.

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