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Solar cooker by using solar absorber material for energy production

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Abstrct

Recently, there has been a lot of interest in the effects of tantalum pentoxide doped with stannic oxide (SnO_2) - silver (Ag) salts for solar absorption based on thermal stability. The Rietveld study of the Ta_2O_5 with SnO_2-Ag doping in the absorption of the crystal structure has been examined. The solar box cooker coats the nanocomposite films to increase while maintaining thermal stability above 398F, as accomplished experimentally. The architecture effectively controls the environment while preserving civilisation.

Introduction

Palanikuamr et al.[1] compared the performance of different type solar box cookers (waste cooking oil and $C_4H_4O_3$, $MgAl_2O_4$/Ni/Fe_2O_3-PCM, without NPCM). The thermal image processing and mathematical method explains, the bar plate attained the high temperature of 164.12 °C by using the effect of nanocomposite PCM. Palanikumar et al. [2] have been studied cooker perfomance using fuzzy and fourier theorems with differnt types (low, middle, High). The food stuffiness is examined by the themal image process,it explains the cooker achieves productivity up to 7.6% [3] combined the fuzzy techniques hybrid with thermal image processing technique to analyze the food stuff. The solar model cooker obtain the overall efficiency 15.41% by the implementation of $C_{18}H_{36}O_2$ and Al_2O_3. [4] investigate the influence of NPCM enhance the food stuff examined by edge detector segmentation techniques. It shows the 45.14% of the thermal act and 53.10% adaptenesss of nanoparticle.

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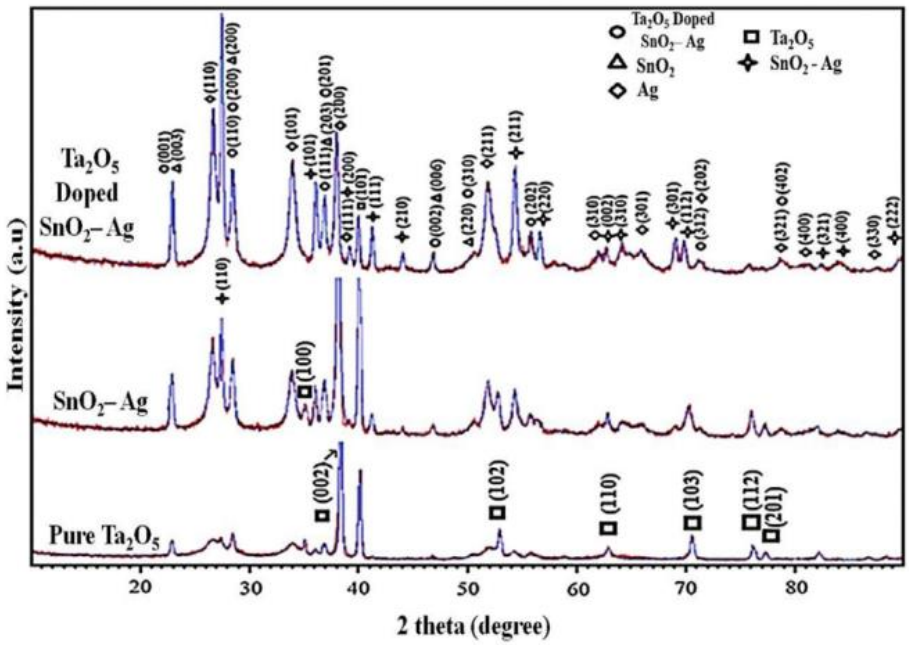

Fig -1 XRD Patten

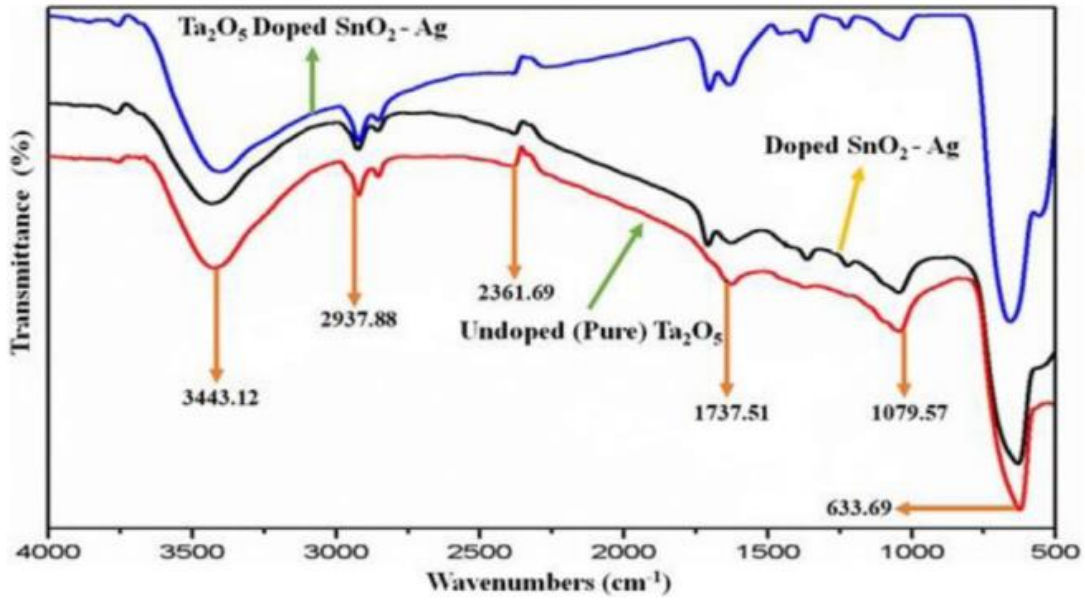

Fig- 2 FTIR

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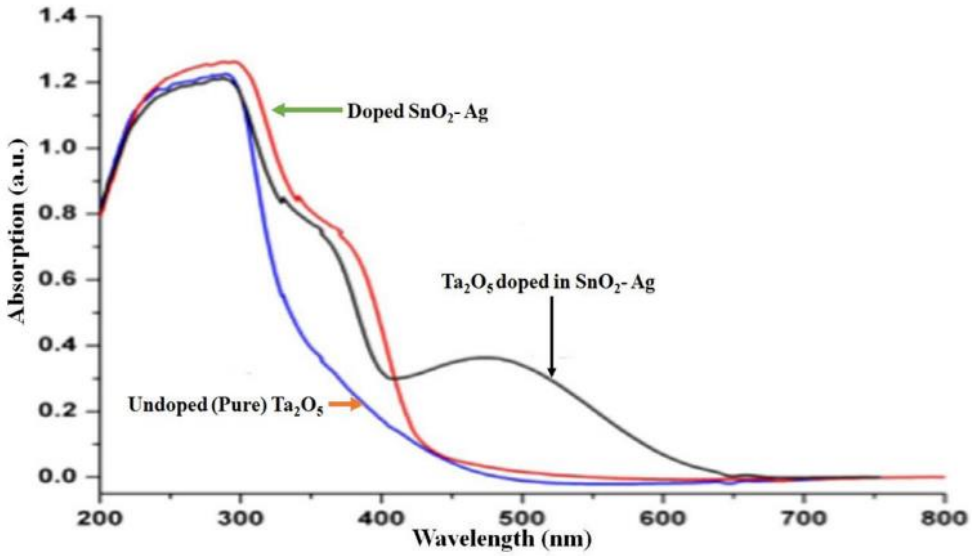

Fig 3. UV absoption

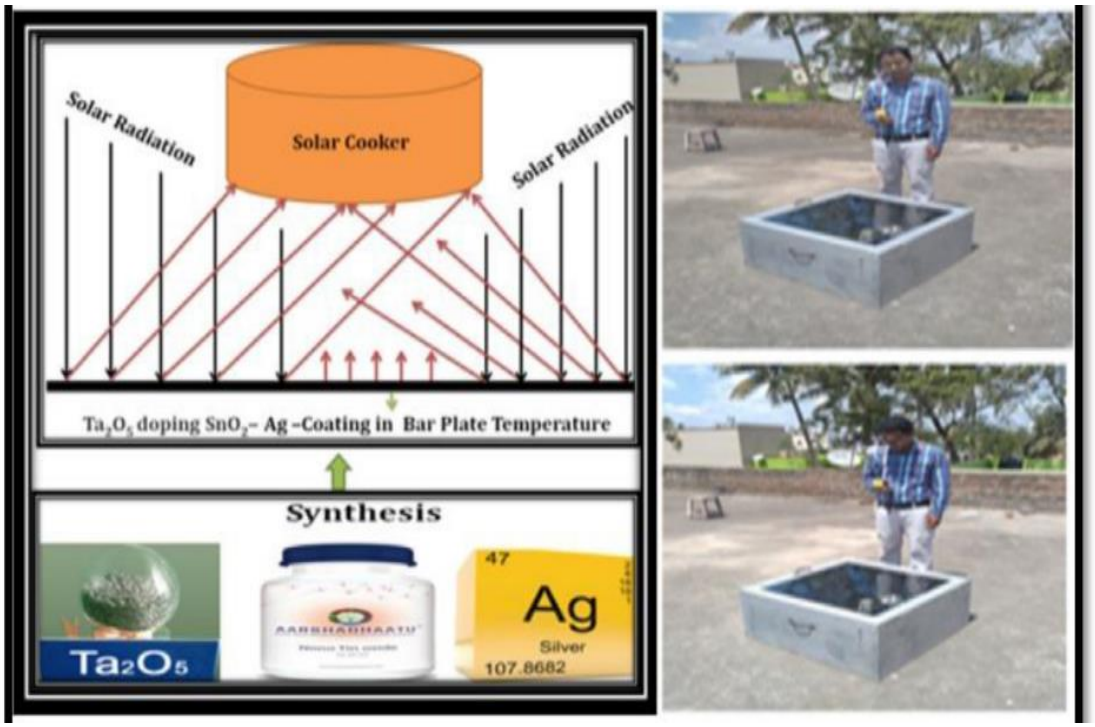

Fig 4 Experimental setup

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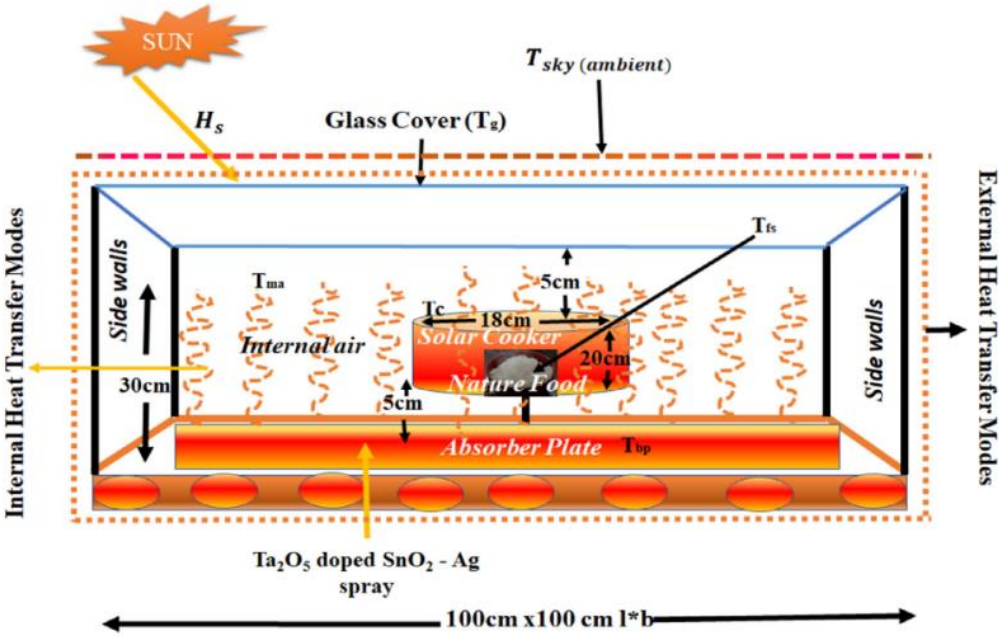

Fig 5. Schematic diagram

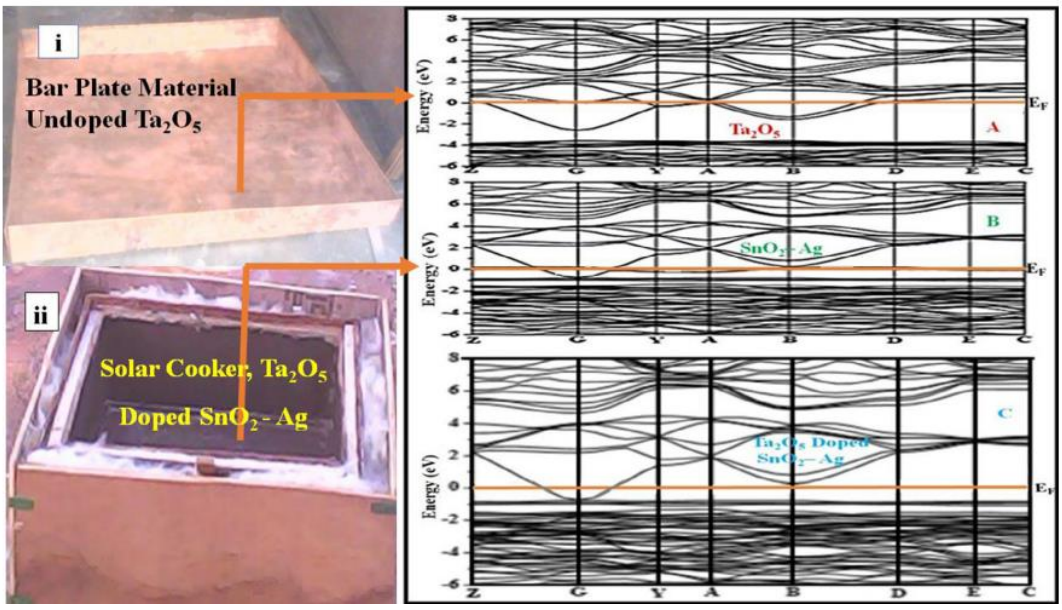

Fig 6. Bandgap analysis

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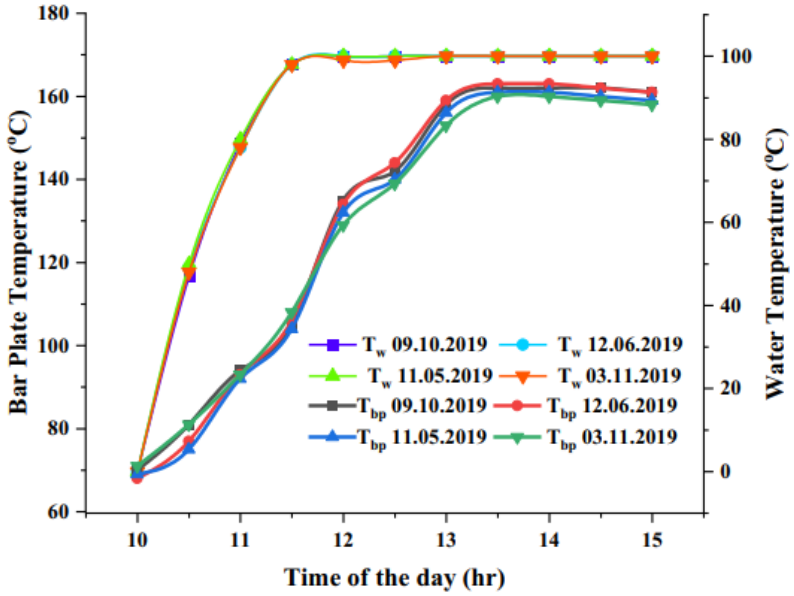

Fig 7. Barplate temperature

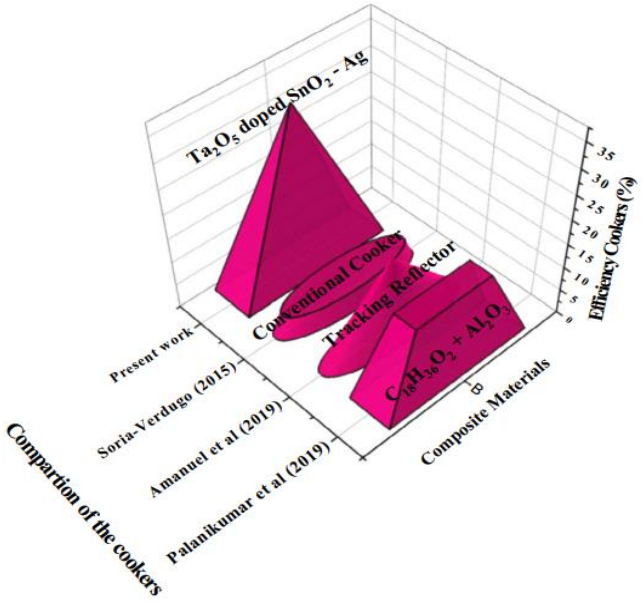

Fig 8. Efficiency Analysis

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Conclusion

The solar box cooker experiment is examined to determine how effectively cooking pots can be heated up. It is accomplished at 398°F on the bar plate. The cooking time is being greatly decreased by the employment of coated nanocomposites in bar plates and the production rate of a faster form of temperature. It is aexcellent organization due to the typical crystallite size of 9.7 nm and using Scherrer's calculation as the streak expansion plane is about 200. Implementing environmental control through good design is beneficial to civilisation.

Reference

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