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Effects of Interfacing and Nanocarbon on the Performance of Basin-type Solar Still

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Abstract. Drinking water is a basic daily need of the community. The existing drinking water sources are often polluted by substances that may be harmful to health. Basin-type solar still is a cheap alternative to convert polluted water into clean water. The problem with basin-type solar still is that the efficiency is low. This study aims to increase the efficiency of basin-type solar still using interfacing and nanoparticles from coconut and bamboo charcoal. This research experiment was conducted in a laboratory using heating lamps to simulate solar energy. The distillation basin has a dimension of 33 cm x 30 cm. The interfacing used is made of wood with an aluminum plate as an absorber. Temperature and water yields sensors are controlled and recorded every 10 seconds using an Arduino microcontroller. The results were compared with a conventional basin-type solar still. The research showed that the yield of distilled water using interfacing and nanoparticles of coconut and bamboo charcoal has increased by 125% and 108% compared to the yield of conventional basin-type solar still. The results of the study can be applied in remote areas where the existing water sources are mostly polluted.