

Cost-Effective Production Of Handmade Paper Through Recycling Of Shredded Currency Waste Of Reserve Bank Of India- An Enzymatic Route

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ABSTRACT

With the growing demand of handmade paper both in the domestic and export markets, the Indian handmade paper industry has been confronting with the major issue of scarce availability and cost prohibitiveness of the cotton hosiery waste, the traditionally used principal raw material for making handmade paper. As a result of the exhaustive R&D work carried out at Kumarappa National Handmade Paper Institute, various ligno-cellulosic raw materials available as waste biomass in different parts of country and the recycled waste paper particularly the shredded currency waste of Reserve Bank of India has been found to be very good and cost effective raw material for making good quality handmade paper.

The recently developed process of recycling the shredded currency waste through bio-enzymatic pulping produces not only a quality handmade paper but also resulted in a large saving of the precious resources like water, energy and chemicals. Physical strength properties of the handmade paper developed from shredded currency waste were found to be better than that produced from mixed office waste (MOW). Besides, Shredded currency waste is available at a much cheaper rate than the waste paper. The strength of the paper produced from it could be improved further by blending it with the pulps prepared from mixed hosiery waste or other long fiber pulps. The paper thus produced can be utilized for making strong carry bags so as to substitute the polythene bags that are going to be banned because of their recalcitrant nature. The process has been successfully up-scaled to the pilot-plant level and is also found to be economical. Thus the adoption of the shredded currency waste as a raw material and its processing through enzymatic route might help in improving the cost-competitiveness and environmental status of the Indian handmade paper industry.

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