

**VISVESVARAYA TECHNOLOGICAL UNIVERSITY
BELGAUM – 590 014**



PROJECT REPORT ON
**“DESIGN AND DEVELOPMENT OF CONTINUOUS WET
TRANSFER PRINTING MACHINE FOR PRINTING NATURAL
FIBRE FABRICS USING ECO-FRIENDLY NATURAL DYES”**
(Sponsored by K.S.C.S.T)

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**BACHELOR OF TECHNOLOGY
IN
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Project guide

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ABSTRACT

Printing of textile materials can be performed in a number of ways directly or indirectly. Transfer printing is an example of indirect method of decorating the textile materials. Transfer printing can be best described as process in which design may be transferred without image distortion from a non/less substantive substance with the applications of heat, moisture, pressure and dwell time. In countries like US, Canada, Japan, Australia and Europe Transfer printing has been in vogue since many years. Wide spread acceptance of Demand Activated Manufacture Architecture (DAMA) and Just In Time (JIT) sales and marketing concept to reduce pipeline inventories have moved the textile industry in the past five years and the acceptance of transfer printing technique will be a milestone in this direction.

In this project work, the potential application of continuous wet transfer printing on natural fiber fabrics like cotton using natural eco-friendly dyes like Thar and Amazon has been investigated at optimum temperatures, pressure and concentrations of Chemicals. In addition, commercially used synthetic Reactive dyes were also used. For this purpose, commercially available cotton fabric was chosen. Printing of the fabric was carried out using the newly developed continuous wet transfer printing machine which was designed and fabricated to ensure optimum transfer of print from transfer paper to the fabric with controlled heat and pressure. The new design and development of such a continuous wet transfer printing machine incorporates thermostat and spring load mechanisms to optimize the required temperature and pressure respectively for adequate colour transfer.

The prints showed moderate to good wash fastness and good rubbing fastness for natural dyes and excellent wash and rubbing fastness for reactive dyes. An optimum print recipe was obtained for all the above dyes which may be recommended for natural fiber fabrics for application in small and medium scale printing industries.

The machine developed was ideal for obtaining excellent prints on cotton fabrics. Further, it can also be used for printing even Silk and other synthetic fibre fabrics such as Polyester. The machine developed is a low cost and high output machine very much suited for continuous transfer printing.