

A DBD Plasma Machine in Textile Wet Processing

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Abstract

The conception of new processes for preparation, dyeing and printing of high quality textile products is presented for a brand new technological solution involving a DBD plasmatic discharge in substrates with cellulosic basis. Developments for the machine design and its implementation in production context are discussed. Results in semi-industrial and industrial prototypes are presented giving wide overview for advantages and benefits achieved in fields such as the shortening and preparation steps, the possibility of close combination of preparation and dyeing operations, the elimination of tensioactives in mercerization of the increase in efficiency of finishing agents and extension of durability of effects. High performance finishing and the use of high technology for the improvement and durability of functional properties obtained in natural textiles are proved to be a great contribution to developments in quality, economy and ecology of textile processes. Textile products with a very high added value, able to answer to the existing or coming exigencies of the market, produced by technologies promoting sustainability, can be regarded as a key point to win a future for textile industry.