

Natural Dyeing of Textile Cotton Fabric and Its Characterization

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Abstract : Today's world is demanding natural and biological colorants on priority bases as an alternative to toxic and unsustainable synthetic dyes. Sustainable natural colors from plants and/or living organisms such as bacteria's and fungi attracted the world research scholars and textile industries recently due to the excitement and opportunities they covered. So, in the present study, natural colors from food waste, such as orange peels and peanuts, were extracted and applied to cotton fabric. The dyeing recipes were optimized in terms of dye concentration, processing temperature and time for higher color strength. The characterization of the dyes and fabric, such as Fourier transform infrared spectroscopy, Scanning Electron Microscopy, and fastness properties were measured for the identification of the chemical groups involved for a better understanding of the dyeing behavior. The results revealed that proper mordanting and concentration of dye on cotton fabric could give high color strength and good fastness to wash and light and these natural dyes can be used as an alternative to synthetic toxic colorants.

Keywords : textile, textile dyes, natural dyes, bio colors

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