DYES (incl. Food colorants)

NPARR, 7(2), 2016-137 Applications of natural dye from *Ixora coccinea* L. in the field of textiles and cosmetics

In the present study an attempt has been made to propose the application of natural dye from *Ixora coccinea* L., commonly known as Jungle geranium, in the field of textiles and cosmetics. Dyeing with *I. coccinea* colourant with different combinations of mordants resulted in different shades, such as pink, lilac, and grey shades. The dyed samples were tested according to ISO standard test methods. The samples dyed with combinations of stannous chloride/ferrous sulphate and stannous chloride/ammonium ferrous sulphate were found to have good wash, rubbing, and light fastness properties. Moreover, an effort was made to formulate lip balm. The formulation was evaluated for its stability at 25 and 40 degrees C for 90days. The colour of the product was assessed by measuring the L*a*b* values. The product offers excellent properties of smoothness, spreadability, and stability at 25 degrees C [N. N. Patil*, A. G. Datar (Guru Nanak Khalsa Coll, Guru Nanak Inst Res & Dev, Bombay 400019, Maharashtra, India.), *Coloration Technology*, 2016, 132(1), 98-103]

NPARR, 7(2), 2016-138 Photocatalytic degradation of methyl green dye in aqueous solution over natural clay-supported ZnO-TiO2 catalysts

A ZnO-TiO2/clay photocatalyst was prepared using a natural Tunisian clay as support. Its activity was assayed in the photocatalytic degradation of methyl green in aqueous solutions, in the presence of UVA irradiation. The photocatalyst was synthesized using a metal organic chemical vapor deposition (MOCVD) with Ti (OPri)4 deposed on the natural Na+clay, followed by a modified sol-gel synthesis method for introduction. The sample was then characterized by scanning electronic microscopy (SEM), high-resolution transmission electron microscopy (HRTEM), N-2 adsorption, X-ray diffraction (XRD) and titration for the determination of the zero point charge (pH_{zpc}). The activity tests showed that the photodegradation efficiency for ZnO-TiO2/clay is higher than for the TiO2/clay catalyst, clearly pointing to a promoting effect of ZnO. The influence of operational parameters such as pH, catalyst dosage, initial dye concentration, UV irradiation intensity, as well as the influence of the presence of different oxidants was evaluated. Almost complete mineralization was obtained upon 30 min of light irradiation in the presence of the ZnO-TiO2/clay catalyst [H. B. Hadjltaief, M. Ben Zina, M.E. Galvez*, P. Da Costa (Show the Organization-Enhanced name(s) Univ Paris 06, Univ Sorbonne, Inst Jean Le Rond dAlembert, 2 Pl Gare Ceinture, F-78210 St Cyr Lecole, France), *Journal of Photochemistry And Photobiology A-Chemistry*, 2016, 315, 25-33].

NPARR, 7(2), 2016-139 Dyeing of Carpet Woolen Yarn using Natural Dye from Cochineal

Natural dyes from plant sources are preferred for coloration of woolen textiles and they give dark and dull colors. Development of a woolen carpet with elegant and vivid colors from natural dyes is still scanty. Natural dye from *Coccus Cacti* called cochinial was extracted by aqueous extraction method and applied on woolen yarn in presence of five different mordants in single and combination forms. Without mordanting, cochinial dye gave bluish purple color and after mordanting, it gave range of colors from scarlet red to black colors on woolen yarn. If two mordants are applied, the final color will depend on the chelating property of dominant mordant. The dominant mordant
forms more amount of coordination complex preferentially with the cochineal dye than other mordants. Woolen yarn dyed with cochineal dye in presence of single and dual mordants, showed moderate (grade 3) to very good (grade 4-5) washing fastness and moderate (grade 5) to excellent (grade 7-8) light fastness properties. It is concluded that natural dye extracted from cochineal has potential to produce selective elegant colors on woolen yarn that can improve the aesthetic value of the woolen carpet [L. Ammayappan*, D. B. B. Shakyawar (ICAR Natl Inst Res Jute & Allied Fibre Technol, Chem & Biochem Proc Div, 12 Regent Pk, Kolkata 700040, India), Journal of Natural Fibers, 2016, 13(1), 42-53].