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Recovery of Waste Acrylic Fibers for the Elimination of Basic Dyes

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Abstract : Environment protection is a precondition for sustained growth and a better quality of life for all people on earth. Aqueous industrial effluents are the main sources of pollution. Among the compounds of these effluents, dyes are particularly resistant to discoloration by conventional methods, and discharges present many problems that must be supported. The scientific literature shows that synthetic organic dyes are compounds used in many industrial sectors. They are found in the chemical, car, paper industry and particularly the textile industry, where all the lines and grades of the chemical family are represented. The affinity between the fibers and dyes vary depending on the chemical structure of dyes and the type of materials to which they are applied. It is not uncommon to find that during the dyeing operation from 15 to 20 % of sulfur dyes, and sometimes up to 40 % of the reactants are discharged with the effluent. This study was conducted for the purpose of fading basics dyes from wastewater using as adsorbent fiber waste material. This technique presents an interesting alternative to usual treatment, as it allows the recovery of waste fibers, which can find uses as raw material for the manufacture of cleaning products or in other sectors In this study the results obtained by fading fiber waste are encouraging, given the rate of color removal which is about 90%.This method also helps to decrease BOD and suspended solids MES in an effective way.

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