ADVANCED OXIDATION PROCESSES USED IN FOOD DYES REMOVAL

Mirila Diana-Carmen[1], Pirvan Madalina-Stefania[1], Platon Nicoleta[1], Didi Mohammed Amine[2], Nistor Ileana-Denisa[1], Azzouz Abdelkrim[3]

[1]University "Vasile Alecsandri" of Bacau, Romania
[2]Université AbouBekr Belkaid-Tlemcen, Algérie
[3] Nanoqam, Department of Chemistry, University of Quebec at Montreal, Canada

Mirilă Diana-Carmen: miriladiana@ub.ro

Abstract: AOP(s) – Advanced oxidation processes, are a set of chemical treatment methods and procedures used to remove organic and inorganic pollutants present in wastewater by oxidation through the reaction who involve hydroxyl radicals (OH^-) formation. Oxidative processes usually refer to a subset of chemical processes which employ hydrogen peroxide (H_2O_2), UV light and ozone (O_3). In order to total mineralization of synthetic dyes from food industries, the art proposes the use of catalytic oxidation processes. These processes are sensitive to variations in pH, temperature, ozone concentration used, dye concentration, the amount of catalyst used, and the duration of the oxidation dyes is high. In order to combat these disadvantages of the methods of oxidation, in this paper we propose the preparation of heterogeneous catalysts based on chemically modified cationic clays, and testing them to discolour toxic dyestuffs from food industry with emphasis on Sunset Yellow dye. This yellow dye is toxic to human health and is on the list of carcinogens. It is present in various foods, such as: juices, ice cream, snacks, various beverages, fish cans, puddings, etc. This dye is forbidden in Norway.

Keywords: oxidative processes, cationic clay, catalyst, food dyes