

CHAPTER 11

PREPARATION OF BIOSORBENT FROM RAW OYSTER SHELL FOR REMOVAL OF COOMASSIE BRILLIANT BLUE R-250 DYE IN AQUEOUS SOLUTION

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INTRODUCTION

Environmental pollution has become a very serious problem globally. World Bank has stated textile processing contributes to 20% of water pollution worldwide, which caused environmental and health problems (Scott, 2015). Dyes are important pollutants among many chemicals in the textile wastewater (Khan & Malik, 2013). Synthetic dyes are organic pollutant found in the industrial effluents of several industries such as textiles, leather, cosmetics, paper, and plastic. The dyestuff used in dyeing process is discharged about 20% to the environment (Saharan et al., 2011). This phenomenon can cause dye contamination in aqueous wastewater from industries due to dyes are not biodegradable. Dyes present in the industry effluent are toxic, carcinogenic and mutagenic to human beings and aquatic life. Dye in water prevents sunlight penetration and reduces the photosynthetic activity. Besides, most of these dyes can cause allergy when the water is used as a water source for drinking (Demarchi et al., 2013).

One of the largest classes of dye is acid dyes that used to give a broader range of bright colours on textiles. Acid dyes contain negative charge that normally forms ionic interactions when applied to fibres with positive charge such as leather, wool and silk during the dyeing process (Guendy, 2010). Most of the acid dyes are found to contain azo, anthraquinone and triphenylmethane compounds. Coomassie