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Treatment of Olive Mill Wastewater by Electrocoagulation Processes and Water Resources Management

Abstract—In Jordan having deficit atmospheric precipitation, an increase in water demand occurs during summer months. Jordan can be regarded with a relatively high potential for wastewater recycling and reuse. The main purpose of this paper was to investigate the removal of total suspended solids (TSS) and chemical oxygen demand (COD) for olive mill wastewater (OMW) by electrocoagulation (EC) process. In the combination of electrocoagulation by using coupled iron–aluminum electrodes, the optimum working pH was found to be around 6. Results indicated that the electrocoagulation process allowed removal of TSS and COD of about 82.5% and 47.5%, respectively at 45 mA/cm² after 70 minutes by using coupled iron–aluminum electrodes. It was demonstrated that the maximum TSS and COD removals were obtained at some optimum experimental parameters for current density, pH, and reaction time.

Keywords—Olive Mill Wastewater, Electrode, Electrocoagulation (EC), TSS, COD.