DESIGNING OF SEMI-INDUSTRIAL SYSTEM FOR PRODUCTION OF OXALIC ACID

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The semi-industrial system, which consists of a batch reactor with temperature controller, a designed absorption column, manometer, mixed-acid reservoir, reflux condenser, and air flow, was designed for production of oxalic acid. Oxalic acid, also known as ethanedioic acid, and its compounds have widespread industrial applications in several fields such as textiles, tanning, oil refining, catalysts, pharmaceuticals, dyes, explosives, straw bleaching, printing, marble polishing, and metal and cloth cleaning. In this work production of oxalic acid from wastepaper was developed in a designed semi-industrial system is studied. Nitrogen oxides formed from this system were recovered absorption column to produce of nitric acid. In this novel way, it was possible to recover NO_x to prevent air pollution and it was possible to reduce the unit cost of reactant for oxalic acid production. A good theoretical yield was obtained by using the catalyst V_2O_5.