

## IMPROVING OF pH CONTROL FOR A WASTEWATER TREATMENT UNIT USING GENETIC ALGORITHM

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### ABSTRACT

LabVIEW technique is the powerful graphical programming language that has its roots in operation, automation control and data recording for the wastewater system with multiple contaminants of heavy metals; Cu, Cr, and Fe from the electroplating process. LabVIEW is a flexible language that contains large number of functions and tools. pH of wastewater is the major key of precipitation process which selected as the desired value of the treatment system. The flow rate of chemical reagents (acid and base) can be selected as the effective decision variable. The pH process dynamically

behaved as the first order lag system with dead time. PI mode would be proven as the best scheme for control the fast pH process. Genetic algorithm has found the suitable stochastic technique for adaptation controller parameters of the unsteady state nonlinear process. PI genetic adaptive controller improves the performance of the process..

### INTRODUCTION

Water pollution is a great problem that menace man life therefore water treatment is a very important, there are many reasons to this problem like biological, thermal, heavy metals and other pollution.