INSTRUMENTATION AND CONTROL MODELS FOR PH AND CONDUCTIVITY MONITORING

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Resumo

Instrumentation and control of chemical processes have been shown to be increasingly necessary in industry and are present in many different areas, from simpler processes such as vegetables cultivation to the control of complex equipment such as spinning disk reactors. In both processes the control of pH and conductivity for a good quality of the final product is of great importance. A simple system has been studied and developed, capable of automatically monitoring and adjusting through the opening or closing of solenoid valves, pH and the conductivity of nutrient solutions used for the growth of vegetables, since these parameters vary greatly during the time of cultivation and directly affect the quality of the final product, adding or not adding value to its selling price. They are also being developed with the help of LabVIEW software some controllers based on the PI/PID algorithms to control the pH and conductivity of the complex spinning disk reactors (SDRs), in recent studies good results have been observed manipulating variables such as base current flow SDR and the speed of disk rotation. However the technologies available on the market today have many limitations and for a precise control of the SDRs, a more in depth study is needed together with the development of controllers, to also develop new

specific sensors that can measure the process variables in real time and can keep them more constant.

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