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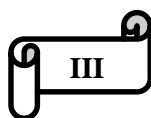
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Abstract

Our project is based on the realization of a low-cost control system using an Arduino Uno and an ultrasonic sensor (for data acquisition) applied on various systems. The benefit of this project is to minimize problems caused by manual regulation. We used different materials to conduct several experiments, including MATLAB for simulation and the Arduino Uno with its IDE software for practical application. This setup allows us to control the pump based on the data sent by the ultrasonic sensor to regulate the level in different reactors.

Key words: Arduino Uno, Ultrasonic sensor, Reactors, Level regulation, MATLAB, C++

ملخص

يتمثل مشروع التخرج الخاص بنا في تحقيق نظام منخفض التكلفة يعتمد على اردوينو اونو ومستشعر الموجات فوق الصوتية لتنظيم مستوى السوائل في أنظمة مختلفة. الفائدة من هذا المشروع هي تقليل المشاكل الناجمة عن التنظيم اليدوي. قمنا باستخدام مواد مختلفة لإجراء عدة تجارب، بما في ذلك المحاكات في نظام البرمجة مطلاب وبرنامج اردوينو مع نظام برمجته من أجل تطبيقات عدة. يتيح لنا هذا الإعداد بالتحكم في المضخة بناءً على البيانات المرسله من مستشعر الموجات فوق الصوتية لتنظيم المستوى في مفاعلات مختلفة.

كلمات مفتاحية: اردوينو اونو، مستشعر الموجات فوق الصوتية، المفاعلات، تنظيم المستوى، مطلاب، سي ++

Résumé

Notre projet de fin d'études consiste à réaliser un système économique basé sur Arduino Uno et un capteur à ultrasons pour le réglage de niveau des liquides dans des différents systèmes. L'avantage de ce projet est de réduire les problèmes causés par la régulation manuelle. Nous avons utilisé différents matériaux pour réaliser plusieurs expériences, y compris la simulation dans le logiciel de programmation MATLAB et le programme Arduino avec son système de programmation pour diverses applications. Cette configuration nous permet de contrôler la pompe en fonction des données envoyées par le capteur à ultrasons pour réguler le niveau dans différents réacteurs.

Mots clés: Arduino Uno, Capteur à Ultrasons, Réacteurs, Régulation du niveau, MATLAB, C++