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Abstract

The purpose of this report is to explain the design and development of "Martyr rabeeian" the ROV from Underwater Robotics Team of Martyr Kazemi Institute in Iran. " Martyr rabeeian " is a small size, low cost and an educational proposes ROV and is designed to perform different tasks in depth of water which has four thrusters, one manipulator arm with a unique electrical and mechanical design, which makes it easy to handle different equipments. "Martyr rabeeian" utilizes real time camera pictures as a main feedback for the operator to identify the environment and different goals and obstacles around the robot. " Martyr rabeeian" has 4 electronic boards consist of a "Control Board", a "Power Board", an "Arm-Sensor board" and a "Thruster board" which make the design completely modular and easy to maintain and configure for different tasks. The Mechanical, electrical and control system is discussed in more details in the following sections. As the importance and the complexity of the tasks performed by ROV increase, the need for automatic control schemes that guarantee high performances in motion and positioning has become a basic issue in underwater automation. At this regard, a control scheme, based on PID technique for Auto depth Control is proposed.