

ID5- HOMEMADE ROVS – MAKE YOURS OWN

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Abstract - Based in handy material, available in local stores, it can be build a remote operated vehicle (ROV) fully operative as the user needs. The total cost of a home-made ROV is between 80 and 400 euros, variable according to installed accessories. The vehicle limitation will be your ability on the construction and seawater pressure. These ROVs can be used only in the first meters of the water column.

INTRODUCTION

Three years ago started in the Oceanic Platform of the Canary Islands (PLOCAN) an educational project called "Taller ROV (ROV Workshop)". It is the building of an underwater remote operated vehicle (ROV) by secondary school students from handy material, as PVC tubes, wood, wires or small motors.

PLOCAN has developed during this period a virtual training platform, books and videos to make easy the building of the ROV ([1-3]). With the support of a sponsor (Obra Social "la Caixa"), PLOCAN provides to educational centers assigned to the project a material kit (with a cost around 80 euros each), building manual and access to training platform (open to anyone interested). It has been built more than 140 ROVs with the participation of 1500 students.

RESULTS

The project has had high impact on the student, teachers, but also in other sectors related with technology and specifically in marine technology.

This fact has generated that specialist in Arduino, including "maker space" members have been involved in the project, but not only with educational objectives, but also to build up fully operative ROVs with a total cost lower than 200 euros (camera not included in the budget).

The ROVs can be controlled by a console connected with a network cable to three motors (one vertical and two for horizontal movement), it let a better control and power; but it can be done cordless by bluetooth.

The installation of a camera it is basic for any application, being recommended the use of real time images. In this project it was installed to the ROV a car camera, made for parking assistance.

An operating and useful ROVs it can be built for anyone, including non-specialist on technology or electronic using economic materials with low total cost.

Keywords

ROVs, economic, handy material, homemade.

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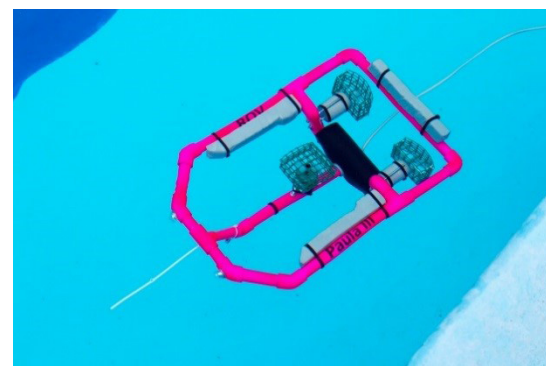
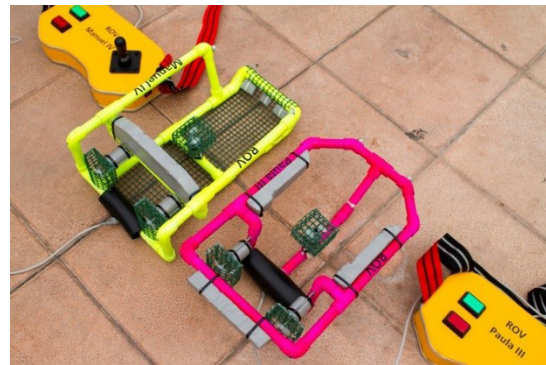


Fig 1-3. ROVs examples made by secondary school students