Miniature Underwater Bridge Pier Cleaning Robot

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In order to develop advanced and cost-effective underwater exploration tools for exploring and utilizing marine resources, this project analyzes the system architecture and core functions of traditional underwater robots, and uses inexpensive consumables such as model aircraft parts and consumer digital equipments. After careful parameter calculation and 3D design, and experimental testing of each part of the underwater robot as well, a miniaturized multi-function underwater robot has been finally developed at a cost of less than 8,000 yuan. This underwater robot features 6 thrusters, with underwater illumination, real-time camera function, underwater attitude sensing feedback and self-stabilization function. It can mount a variety of experimental instruments and devices. Its maximum running speed is 1.5 meters per second, with maximum full-load endurance as 1h, safe diving depth as 100 meters and dead-weight as only 13kg. Its total size is merely 480*300*280mm. Hence, this underwater robot can be very easily carried and used in field operation.

Awards Won:

Fourth Award of $500

International Council on Systems Engineering - INCOSE: Certificate of Honorable Mention