

OPPINION  
on  
the dissertation work of Eng. Konstantin Shterev  
for the Doctorate degree  
from IO - BAS, Varna

The dissertation presented is on the topic: "Remotely Operated Vehicle for a continental shelf research". It consists of 8 chapters with a total volume of 212 app pages. 123 literary sources are cited. Attached is the Abstract of the thesis. The topic is interdisciplinary - the geological and archeological problems of the Black Sea shelf exploration on the one hand and the engineering problems in the field of development and operation of robotic and controllable submarines on the other. The author has succeeded in developing, refining and examining in practice a device to which organizations and institutions whose activities are relevant to underwater exploration of the shelf show considerable interest.

The first chapter of the thesis is introductory. It describes the problem that is being solved in the dissertation, sets out the goals and tasks whose solution leads to their achievement.

The second chapter is devoted to the electrical supply of the submarine. Resolved the cable length problem that leads to power losses.

Chapter 3 introduces the system for communication with the apparatus. An Open Systems Interconnection (OSI-model) is introduced.

Chapter four deals with problems with the cable to power and communicate with the device. It is essential to use a single cable, to power the apparatus, to exchange data and to mechanically secure it.

Chapter Five discusses the propulsion system of the apparatus - propellers with brushless electric motors with a fixed orientation to the apparatus but with individually controlled rotational speeds.

The sixth chapter is devoted to underwater lighting and its control - an essential part of the functionality of the apparatus, designed to operate at depths up to 200 meters.

Chapter Seven discusses the selection and operation of an HD video streaming as a major submarine unit and a source of sea bed information.

The results achieved in the development of each element of the apparatus are presented in Chapter Eight, formulated as the final.

The main contributions in this dissertation are presented in the Abstract - item 1.5.

The nature of the development, the construction of a workable device that really serves the Black Sea shelf's researchers, eliminates the plagiarism problem so characteristic of some modern-day science degree applicants whose output is exclusively of the "text file" type. This is a qualitative and extremely useful dissertation and I would support the awarding of the Doctorate degree to Eng. K. Shterev.

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Varna,

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