**A**

**PROJECT REPORT ON**

# UNDER WATER IMAGE ENHANCEMENT BY USING BEMD METHOD

**ABSTRACT**

In the recent days, wide range of research has been carried out on visual enhancement of under images in submarine and military operations to discover submerged structural designing and sea floor exploration. But, diving in the deep ocean for a long time has increased the difficulties for analysis of underwater images. Further, other factors such as scattering resulting from presence of particles inside the water and blurring effects reduce the quality of images being captured by underwater optic camera. There are several algorithms have been introduced to improve the visual quality of deep-water images. Therefore, in this project, a novel algorithm based on bidirectional Empirical Mode Decomposition (BEMD) to enhance the visual quality of the underwater images will be implemented and comparison of data with conventional enhancement technique will be illustrated. The implementation will be done using MATLAB software.

**Index Terms—** Visual enhancement, Image Processing, Scattering effects, Illumination conditions, BEMD

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