

1. AU2020103198 - UNDERWATER WIRELESS OPTIC COMMUNICATION USING SINGLE PHOTON AVALANCHE DETECTOR (SPAD) AND QUADRATURE AMPLITUDE MODULATION (QAM)

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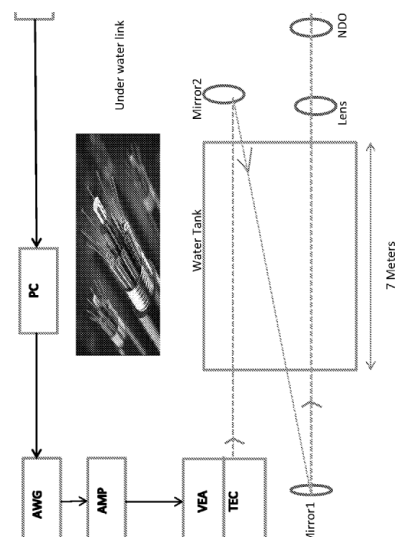
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Title

[EN] Underwater Wireless Optic Communication using Single Photon Avalanche Detector (SPAD) and Quadrature Amplitude Modulation (QAM)



Abstract

[EN] [009] The communication influences the life of human since the Precambrian ages. The modern communication outstrips through wireless networks and unmanned aerial vehicles remotely controlled by technical devices. The communication amplified in land to connect devices and human activities with artificial Intelligence to decide upon the reactive and reporting strategy. Whereas the underwater communication has to be implemented, such that underwater transmission has many limitations like distance, pressure difference, and heavy attenuation. The underwater optical wireless communication system must benefit the bandwidth and better data rate. The proposed underwater optical wireless communication uses multi-pixel photon counter as the receiver and uses Orthogonal Frequency Division Multiplexing (OFDM). The receiver should be highly sensitive even in poor light to receive signal without any data loss is to be coupled with Quadrature Amplitude Modulation (QAM) to refine the signals received with high data transmission rate and transmission distance. The modulation of signals helps in underwater communication better than other fiber optic communication techniques. The Single Photon Avalanche Detector has the capacity to receive single photon leading to high sensitivity, which yields high data rate of transmission underwater. Fig 1