Making and Utilizing Wave Generator Using Eco-Friendly Buoy

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This project is to create a buoy-type wave generator using eco-friendly buoys, focusing on the difficulty in installing the existing wave power generators and the corrosion of styrofoam buoys in the ocean. Wave generators using buoyancy and elasticity were implemented using modelled arcrylic gears and supports. We put the wave generator in a 2D tank and operated it by changing the waveheight and wavelength, and it was confirmed that the higher the wave height, the higher the number of rotations of the gear, and more energy is produced. In order to fuse with wave power generators, the types of eco-friendly buoys provided by the Korean government were investigated, and injection-type buoys that are spherical and relatively deformable were used in this project by comparing the advantages and disadvantages of each. The buoy-type wave generator manufactured in this way will be able to be used as an appropriate technology due to various methods of use and utilization, and it will be able to supply power necessary for drone exploration or deep-sea exploration in a hybrid manner. In addition, power can be used for LEDs to be used as a marine indication buoy around the reef or in areas where swimming is prohibited in beaches.

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