

AUV/UUV In-water Recharging with Pivoting Docking Station

Technology Description:

The pivoting docking station, designed for interconnection with various wave energy converters and energy storage devices, enables the capture and charging of autonomous underwater vehicles (AUVs/UUVs). Horizontal capture is achieved using a cone guide and cylinder, while a frame allows the entire docking station to pivot once the AUV/UUV is captured. The center of gravity is adjusted using a movable weight, facilitating smooth transitions between horizontal and vertical positions. The vertical profile in the vertical position benefits point absorber wave energy converters by minimizing drag and enabling uninterrupted functioning while the AUV/UUV charges. This innovative technology presents a versatile and efficient solution for underwater AUV/UUV charging and holds promising potential for applications in ocean monitoring and renewable energy generation.

Inventors:

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Applications:

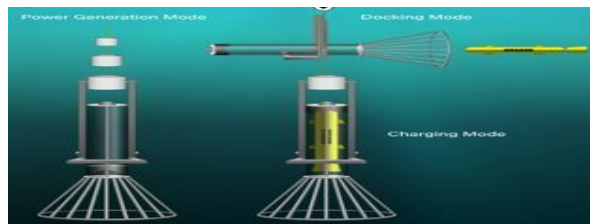
- Underwater Data Collection and Communication
- Offshore Operations and Maintenance
- Marine Research and Exploration

Benefits:

- Enhanced operational efficiency: In-water recharging of AUVs/UUVs within wave energy converter (WEC) systems eliminates the need to remove the vehicles from the water for charging, leading to increased operational efficiency and reduced downtime.
- Extended mission duration: AUVs/UUVs equipped with the pivoting docking station can continue their missions while being recharged, enabling longer mission durations, and allowing for more extensive data collection, surveys, inspections, and other underwater operations.
- Continuous data collection: The technology ensures uninterrupted data collection by enabling AUVs/UUVs to operate continuously while being recharged. This feature is particularly valuable for marine research, environmental monitoring, and surveillance applications where consistent data is crucial.

Patent Status:

US Patent Pending (US17/845,015)



PTO Dock

For more information:

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