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A highly sensitive underwater video system for use in turbid aquaculture ponds

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The turbid, low-light waters characteristic of aquaculture ponds have made it difficult or impossible for previous video cameras to provide clear imagery of the ponds' benthic habitat. We developed a highly sensitive, underwater video system (UVS) for this particular application and tested it in shrimp ponds having turbidities typical of those in southern Taiwan. The system's high-quality video stream and images, together with its camera capacity (up to nine cameras), permit *in situ* observations of shrimp feeding behavior, shrimp size and internal anatomy, and organic matter residues on pond sediments. The UVS can operate continuously and be focused remotely, a convenience to shrimp farmers. The observations possible with the UVS provide aquaculturists with information critical to provision of feed with minimal waste; determining whether the accumulation of organic-matter residues dictates exchange of pond water; and management decisions concerning shrimp health.

Biography

Chin-Chang Hung is currently a Professor of the Department of Oceanography at National Sun Yat-sen University, Taiwan. He completed his PhD at Old Dominion University, Virginia, USA. His research interests are to better understand mechanisms affecting marine carbon biogeochemical cycling in the ocean and to study extreme atmospheric events, dust storms, typhoons and extreme cold event, affecting nutrient dynamics, plankton community composition, biological pump and particulate organic carbon export flux in the ocean. Currently, he also works on application of aquaculture technology to monitor marine plankton, shrimp behavior and aquatic environment management.

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