Technology Available for Licensing
UB Docket R-6583

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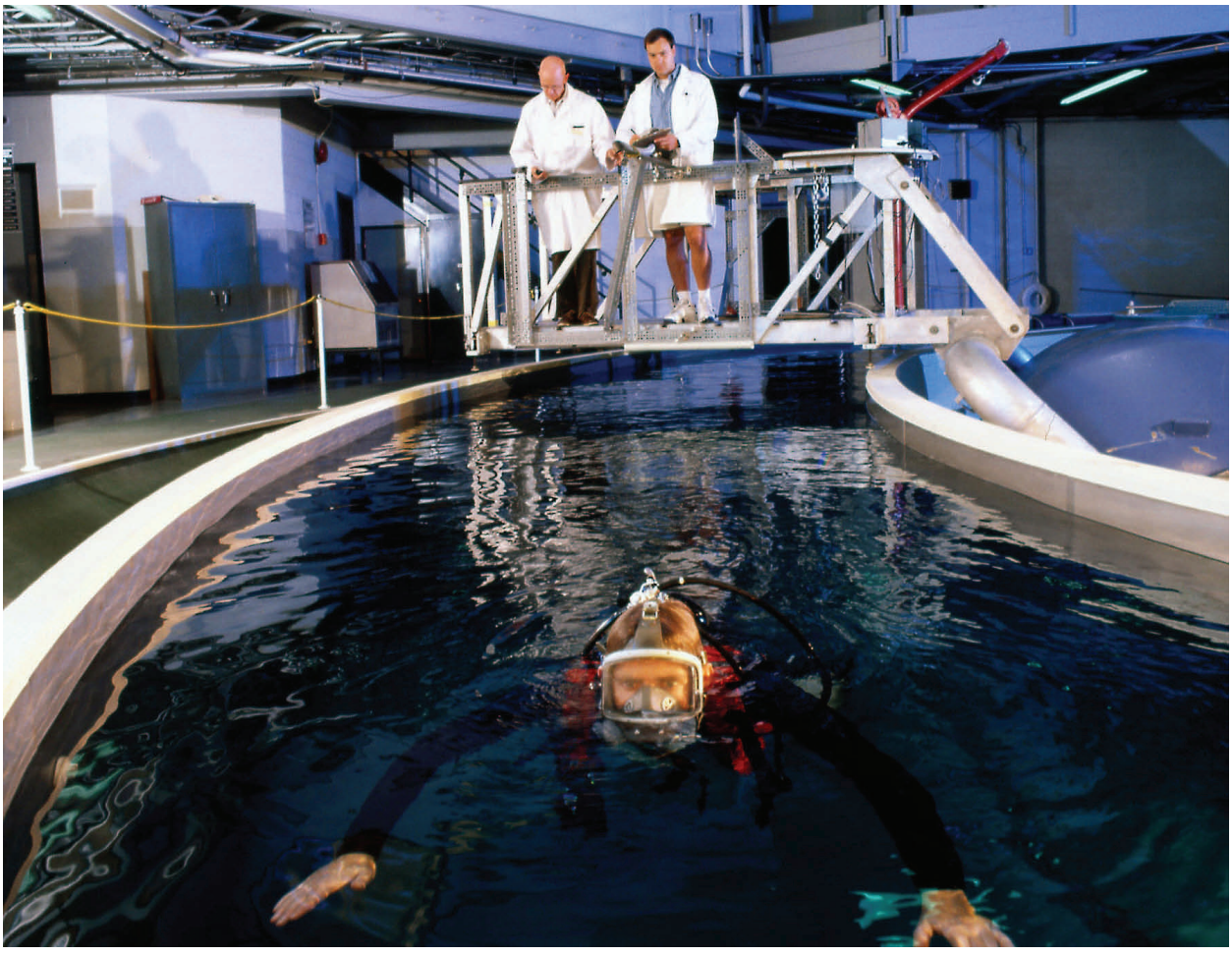
Predictive Monitoring System
for CO_2 Scrubber Endurance

Non-hygroscopic soda lime is used to remove exhaled carbon dioxide (CO_2) in closed circuit breathing apparatus. As a diver exerts him/herself while swimming, the soda lime in the scrubber canister will gradually be used up until it is no longer capable of absorbing more CO_2. This results in the dangerous medical condition of hypercapnia (abnormally high CO_2 concentration in the body). The present invention uses a microcontroller and sensors to continuously monitor the rate of soda lime usage and calculates the available remaining dive time. The remaining time (in hours and minutes), continuously adjusting for changes in physical activity, is presented to the diver via his/her dive computer display or a display in the facemask. Importantly, the system's memory allows the diver to use the equipment for repeat dives, relying on yet unused CO_2 absorbing capacity.



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Predictive Monitoring System

for CO_2 Scrubber Endurance

- Calculates remaining dive time
- Adjusts with diver's exercise rate
- Warns when the scrubber is nearing complete utilization
- Stores dive information allowing additional dives without recharging scrubber
- Battery operated, low power consumption, cost effective
- Accommodates radial or axial scrubber canister designs

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PATENT STATUS
U.S. and foreign patents pending.