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Electric Ship

Development of an Electric Ship Trimaran using Eco Friendly Saltwater Flow Batteries

This webpage QR code

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Electric Ship began as a efficient multihull powered completely by a saltwater flow battery from Salgenx for electricity. This can be done in freshwater or saltwater. The marine craft is unique in that it has a construction method which uses three hulls that are extruded in a industrial carbon fiber weaving loom into positive floatation coated with HDPE, to which decks are attached. This construction method allows energy storage to be built into the hulls as a structural member.

PDF Version of the webpage (first pages)

Goals of an Electric Ship

- No bilge
- Nothing below the waterline
- Positive floatation hulls (non-sinkable)
- Reduce curved surfaces to reduce build and maintenance time
- Straight and right angle cornered interior for use of standardized components and appliances
- Maintenance free HDPE hull coating
- Bolt down cabinets, furniture, fixtures for rapid reconfiguration and flexible interiors
- No hatches. No standing rigging (kite wind power option)
- Vertical bifacial solar panels

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Paddlewheel Power Requirements

This analysis provides valuable insights into the propulsion requirements for a trimaran with the specified characteristics and operating conditions. It highlights the importance of considering both the thrust generated by propulsion systems and the power requirements across a range of speeds when designing and operating such vessels.

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Developing the Concept of an Electric Ship Trimaran

I am developing and designing a eco-electric-ship (multihull) based on First Principles, which is fully sustainable for tourism, travel, AirBNB, or small commercial freight/trade, to travel the globe. The modular platform will be able to host a range of missions. Based on the book and community Gaviotas: A Village to Reinvent the World, I hope to evangelize solar technologies, and sustainable tourism, with zero environmental impact (actually will enhance the environment) around the world.

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Topics

Various topics for the Electric Ship including:
Zeolites, MS Burgenstock, Conrad Bora Bora Catamaran,
E Ship Build Components, First Principles, Food at Sea, Galley, Gaviotas, GPU: Ground Power Unit Lithium Ion, Power Hand Cart, Modular Composite Multihull, Pearl Beach Bora Bora Soel Yacht Catamaran Review, Rebuild vs New Build Review, Solar Oven, Solar Panel Selector, Make Your Rib or Zodiac Unsinkable Using Reflectix

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Electric Ship Website Launch

Electric Ship is a project to redefine shipping by using a modular build concept, with multiple missions, using renewable energy.

The business model is a solar powered electric powered multihull yacht for Swiss and Italian lakes, which have a dual purpose of AirBNB. A minimal crew will operate the yachts, starting at Lac Léman (Lake Geneva) in Switzerland which offers more than 40 km of Swiss and French culture, including the Swiss Riviera. Updated: Unfortunately, Swiss maritime law does not allow overnight sleeping on a vessel.

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Saltwater Flow Battery Technology as Energy Storage for Electric Ship

Are you interested in alternatives to waterjets, or large diesel engines ? Large storage batteries may be the answer powering a paddlewheel.

The salt water flow battery can simultaneously store power and make fresh water from brine or seawater. Imagine charging your battery from solar panels or wind, while making up to 2,600 liters (687 gallons) of fresh water per charge (a charge typically takes about 5-6 hours with a flow battery).

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Electric Ship Made with HDPE Hulls

HDPE high density polyethylene thermoplastic used for boat building and has become a new trend. Known for its high strength-to-density ratio, the density of HDPE can range from 930 to 970 kg m3. Being lighter than water has an enormous advantage in the marine field. The HDPE is resistant to many solvents making it a perfect choice for the boat building industry.

The ultimate desire of building hulls using HDPE would be to lay down the bottom keel layer, then 3D print up the sides and honeycomb interior which is later filled with expandable closed cell foam. Integrated within the hulls are vertical risers (typically steel, carbon fiber beams, or steel cages) locked into place with foam.

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Electric Ship

Electric Ship is working with Infinity Turbine to develop a Salt Flow Battery that can be used on land and on the water.

Saltwater (the ocean) is used as one electrolyte, while a tank of vegetable oil is the other electrolyte. Combined with electrolyzers, this makes a saltwater battery.

We welcome any business and equipment inquiries.

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Swiss Paddlewheel

Lucerne and Beckenreid on Lake Lucerne, Switzerland.

Paddlewheel Uri in Lake Lucerne Switzerland: Built in 1901 the Uri steamship is still in use in Lake Lucerne connecting Lucerne to Fluelen, Switzerland. More Photos

The technique is to come in faster to maintain forward speed to make the rudder effective, then reverse to stop. The paddlewheels are connected and cannot be operated separately for asymmetric thrust. Amazing how much thrust these 8 x 3 ft paddles have (keep in mind that the density of water is 1000 kg per m3 or just over 62 lbs per ft3). A 8 x 3 ft paddle can bite 24 ft x 62 lbs (approx) = 1,488 lbs (675 kg) at rest.

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