



## Poseidon Sciences Group

122 East 42nd Street  
Suite 1700, New York, NY

1 646 251 1661

[jmatias@poseidonsciences.com](mailto:jmatias@poseidonsciences.com)  
[www.poseidonsciences.com](http://www.poseidonsciences.com)

Poseidon Sciences is a research and development company specializing in evaluations of marine coatings using laboratory and field immersions.

### Laboratory studies:

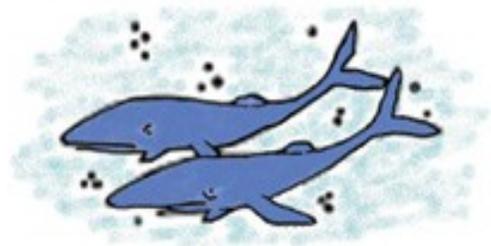
- Barnacle cyprid assays
- Ecotoxicology of active compounds and coatings
- Marine micro-algae and bacteria assays

### Field studies:

- Shallow submergence of coated panels
- Dynamic testing
- Subsea immersion

## Marine antifouling coatings tests in winter time

Marine coatings development is a never ending process of trial and error. While paint chemists can formulate new variations to test, it is the product validation process that takes much longer. Even longer if one conducts tests in sub-tropical or sub-temperate regions where fouling conditions slow down or completely stop when the water gets cold. We all wish that a more lab friendly process can be developed to predict the performance of marine coatings. That wishful thinking has yet to materialize. Immersion testing in the ocean is an unavoidable process and even more complicated by the seasonal conditions of the test site.



**Darn ! First day of mating season and I've got a barnacle on my chin !**

Until someone devises a truly reliable lab scale antifouling testing method that can match real world conditions, progress in marine antifouling coatings research will still depend on testing in real oceanic conditions. At Poseidon-SHMRC we continue to refine our marine coatings tests to meet industry expectations. Our marine test site in Tuticorin Bay, over the last 10 years, has become a testing ground for coatings companies to validate the performance of marine coatings in an environment characterized by year-round fouling and high density of fouling organisms. (Learn more about Poseidon Sciences and SHMRC [here](#)). One can drop a panel at our site and get barnacles populating the surfaces at any time of the year. The predominant fouler is *Balanus amphitrite amphrite Darwin*. (Read more about Darwin and barnacles [here](#)). This is the same ubiquitous fouling organisms present in practically all the major ports around the world. Since man started to venture out far out in the ocean, these barnacles have hitchhiked their way along the underside of sailing ships. They are among the earliest invasive species we have carried along with our ships.

### Field testing and climate change

We have constantly monitored the fouling environment of our site and for the last 8 years had been quite consistent in its fouling environment. In the last 2 years, we began to see the appearance of new fouling organisms attaching to test panels. Although barnacles remain the predominant organism, the appearance of new organisms not previously seen is both an academic interest and cause of some concern in the future. Biological systems are always dynamic and climate changes, though seem imperceptible to us, can have profound long term consequences. Thought I share with you some images of these new organisms that are showing up on our test panels.



Unidentified specie



Oysters colonial tubeworm sponge



Blue mussel



Plate coral



Biofouling colonial sponge



Black sponge

## Developing a testing program with Poseidon - SHMRC

As a contract research organization, working with the industry is normal process for us and we have done work with practically all the marine coatings companies in the world. We can help in developing an appropriate testing regimen to optimize your company's validation requirements. Ecotoxicology testing is becoming a necessary test to support 'green' product claims. Published in 2010, this method provides a means of supporting claims that a coated surface will have zero or minimal toxic effects of more sensitive marine life, using a battery of tests using marine larvae. To learn more, read [here](#).

Our 'Publications' section of our website ([www.poseidonsciences.com](http://www.poseidonsciences.com)) displays our recent articles and newsletters, most of which are associated with marine biofouling, while our 'Testing' sections describes the range of our field and laboratory tests.

We look forward to working with you this winter season.

Jonathan R. Matias

*Executive Director*

**Poseidon Sciences Group**

**1 646 251 1661**

[jrmatias@poseidonsciences.com](mailto:jrmatias@poseidonsciences.com) or [PoseidonNova@aol.com](mailto:PoseidonNova@aol.com)