NOVEL ENVIRONMENT-FRIENDLY COATINGS FOR MARINE APPLICATIONS (RFT-133)

Invention Summary:

The fouling of surfaces exposed to an aquatic environment is a serious problem. Fouling can inhibit the performance of marine vessels (significantly increasing fuel usage) and can lead to the spread of unwanted organisms to non-indigenous harbors, having a devastating effect on local ecosystems. Many commercially available antifouling and biocidal coatings have been linked to environmental problems (for example, toxins from paint flakes).

NDSU scientists have developed proprietary and novel, silicone-based compounds which incorporate tethered biocide moieties, and which can be used in coating formulations to prevent or reduce fouling by marine life and related substances on ship surfaces. This NDSU technology is an anti-fouling material for use in a marine environment which includes a copolymer having a carbon and/or silicone backbone with a pendant biocidal group, as well as an optional pendant fouling release group.

Benefits:

- Tethering of biocide reduces leaching of hazardous chemicals.
- NDSU anti-fouling coatings improve fuel economy for marine vessels.
- Prevent or reduce fouling of ship hulls and other surfaces by aquatic organisms.
- Effective anti-fouling properties.

Phase of Development:

This technology has successfully completed laboratory testing with reproducible results.

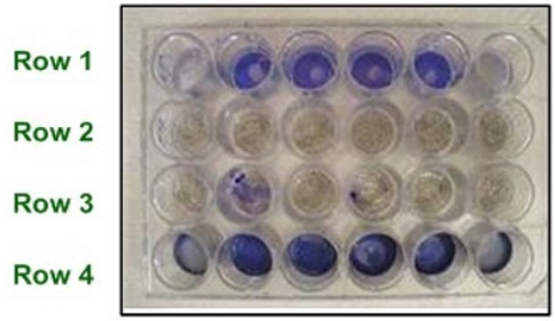

Figure depicts an example of marine testing (20-day immersion) on two NDSU coating compositions as compared to two commercially available compositions.

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Patents:

This technology is the subject of US Patents No. 7,544,722 is available for licensing and partnering opportunities.

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