Rechargeable Antimicrobial Latex Paint

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References:

Kocer, et al, "N-Halamine Copolymers for Use in Anti-microbial Paints", ACS Appl. Mater. Interfaces, 2011, 3 (8), pp 3189–3194 (link)

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Overview: Auburn University is seeking a licensee or development partner for chemical additives for latex paints that destroy microorganisms and viruses upon contact. Current solutions to the prevention of pathogenic spread include continually cleaning potentially contaminated surfaces or treatment with chemicals such as nanosilver. However, many times the contaminated surfaces are not cleaned in time to prevent transmission, and the effectiveness and safety of nanosilver is questionable. Auburn's novel chemistries inactivate pathogens upon contact and can be introduced onto a variety of surfaces through latex paint. This technology has potential applications in the following economic sectors: Hospitals, clinics & nursing homes, military applications, and consumer applications, including schools & day care centers.

Advantages:

- **ANTIMICROBIAL -** Inactivates viruses, bacteria (Gram positive and Gram negative), and other pathogens absorbed onto surfaces, which reduces the risk of spreading infections
- **LATEX COMPATIBLE -** Novel copolymer formulation is soluble in water, enabling compatibility with latex paints
- **LONG LASTING** - Demonstrates exceptional stability to UV degradation as compared to previously developed N-halamine materials
- **RECHARGEABLE -** Can be recharged with a chlorine solution (such as commonly used diluted household bleach) that maintains activity for an extended period
- **VERSATILE -** Significantly lowers risk of mold and mildew as well as bacteria, reducing undesirable odors, stains and allergen production

Description: A constant challenge in healthcare is preventing the spread of pathogens to and from patients. This danger has increased in recent years with the emergence of antibiotic-resistant infections, such as MRSA. Currently, hospital-acquired infections are one of the top 10 leading causes of death in the US. Associated costs surpass $30 billion annually worldwide.

This technology provides a rechargeable system to keep surfaces of hospitals, clinics, day cares, and homes free of contaminations for an extended period of time. The N-halamine formula inactivates bacteria and viruses on contact, and can be recharged using something as simple as diluted household bleach. In addition, the treated surfaces also fight the build-up of mold and mildew, reducing problems associated with malodors, stains, and allergies.

Status:

- U.S. patent 8,496,920; additional patents available for other antimicrobial applications
- When incorporated into latex paints, technology can achieve over six logs of inactivation on S. aureus and E. coli within 5 minutes with low percentage of polymer (1.5 wt%)
- Incorporation into latex paints have shown stability, ability to be charged and recharged with dilute bleach solutions, and retention under flowing tap water
- A related chemistry from Auburn has been commercialized for water purification
- This technology is available for exclusive or non-exclusive licensing

Early Stage → *Lab testing* → *Field testing* → *Market Ready*