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## Rechargeable Antimicrobial Surfaces

*Auburn University is seeking a licensee or development partner for chemical formulas designed to be incorporated onto fabrics and surfaces that destroy bacteria and viruses upon contact.*

**Overview:** 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 kill pathogens upon contact and can be introduced onto a variety of surfaces. This technology has potential applications in the following economic sectors: hospital and clinics, including floors, walls, scrubs and bed sheets; children's day care centers, nursing homes; military applications, and consumer applications.

**Advantages:**

- ANTIMICROBIAL** — Kills viruses and bacteria absorbed onto fabrics or surfaces, which reduces the risk of spreading infections
- RECHARGEABLE** — Can be recharged with a chlorine solution (such as diluted household bleach that is often applied during conventional cleaning) that maintains activity for the long term
- VERSATILE** — Significantly lowers risk of mold and mildew as well as bacteria, reducing undesirable odors, stains and allergen production
- LONG LASTING** - Demonstrated to withstand wash cycles and UV exposure

**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, with associated global costs surpassing \$30 billion annually.

This technology provides, for the first time, a rechargeable system to keep fabrics and surfaces of hospitals, clinics, day cares, and homes free of contaminations for an extended period of time. The n-halamine formula kills 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.

A variety of n-halamine chemistries have been developed, with different formulations best suited for different applications such as fabrics, paints or hard surfaces. Additional opportunities have been identified in food safety.

**Status:**

- Patents issued for various chemistries, including [8,496,920](#), [8,535,654](#) & [8,821,907](#).
- The chemicals have been produced, attached to surfaces, and shown to kill bacteria: up to six logs of inactivation within 1 to 30 minutes (depending upon system tested).
- Fabric applications have been demonstrated to hold up under numerous wash cycles.
- A related chemistry from Auburn has been commercialized for water purification.
- This technology is available for exclusive or non-exclusive licensing.
- Different chemistries can be licensed individually or as a group, depending upon applications.

