One Auburn University is seeking a licensee or development partner to commercialize one or more patented N-halamine technologies for the application of antimicrobial compounds in the food safety industry.

Overview: Currently available methods to eliminate and/or minimize pathogens include continually cleaning potentially contaminated surfaces with sanitizing chemicals. The effectiveness must be closely monitored which can be expensive and may have toxicity issues. Auburn’s novel chemistries kill pathogens upon contact and can be bonded onto a variety of surfaces. Further, covalently bound molecules can be recharged to maintain the desired antimicrobial concentration. Potential applications include food contact surfaces such as pads, storage containers, conveyor belts and drains.

Advantages:
- **ANTIMICROBIAL** - Kills viruses & bacteria (Gram positive & Gram negative) on contact
- **RECHARGEABLE** - Can be recharged with a chlorine solution (such as diluted household bleach) that maintains activity for the long term
- **VERSATILE** - Enables attachment to textiles, paints and polymers/plastics
- **LONG LASTING** - Demonstrated to withstand wash cycles and UV exposure

Description: A constant challenge in the food safety industry is controlling food-borne pathogens throughout the supply chain, whether it exists on the food as it arrives at a facility, or if environmental factors introduce the pathogens during processing. Due to the need to hold or recall product, food adulteration is very expensive and risky for all stakeholders.

This technology provides an easily rechargeable system to reduce microbiological hazards for an extended period of time. All of Auburn’s patented N-halamine formulations kill bacteria and viruses on contact by transferring chlorine directly to the surface of the pathogen. The N-halamine compounds are much more stable and less corrosive than household bleach, yet can be easily recharged using something as simple as dilute bleach. Other formulations are tailored for use with disposable products. In addition, the treated surfaces also fight the build-up of biofilm thus reducing the potential for niche development and enhancing sanitation results.

A variety of N-halamine chemistries have been developed, with different formulations best suited for applications such as fabrics, non-woven textiles, paints or hard surfaces. Additional work could be performed to develop water-soluble antimicrobial solutions for washes and/or rinses such as for produce and poultry chiller water treatment, or to develop chemistries to attach N-halamines to steel.

Status:
- Various patents issued for the different chemistries, including 8,496,920, 8,535,654, and 8,821,907
- Available for exclusive or non-exclusive licensing, on a patent-by-patent basis
- Have been attached to various surfaces and shown to kill bacteria with up to six logs of inactivation within 1 to 30 minutes (depending upon compound and conditions tested)
- Have been shown to hold up under numerous wash cycles (fabrics) and UV light (paint)
- A related chemistry from Auburn has been commercialized for water purification