Moving Textiles into the 21st Century Through Technology

Protection Against Hospital Acquired Infections

December 2019

Argaman Technologies Ltd.

Let's Start from the End!

Goals:

Reduce the Cost of Patient Care

Reduce Patient Morbidity and Mortality

Reduce Antibiotic Consumption

Reduce Hospital Nights

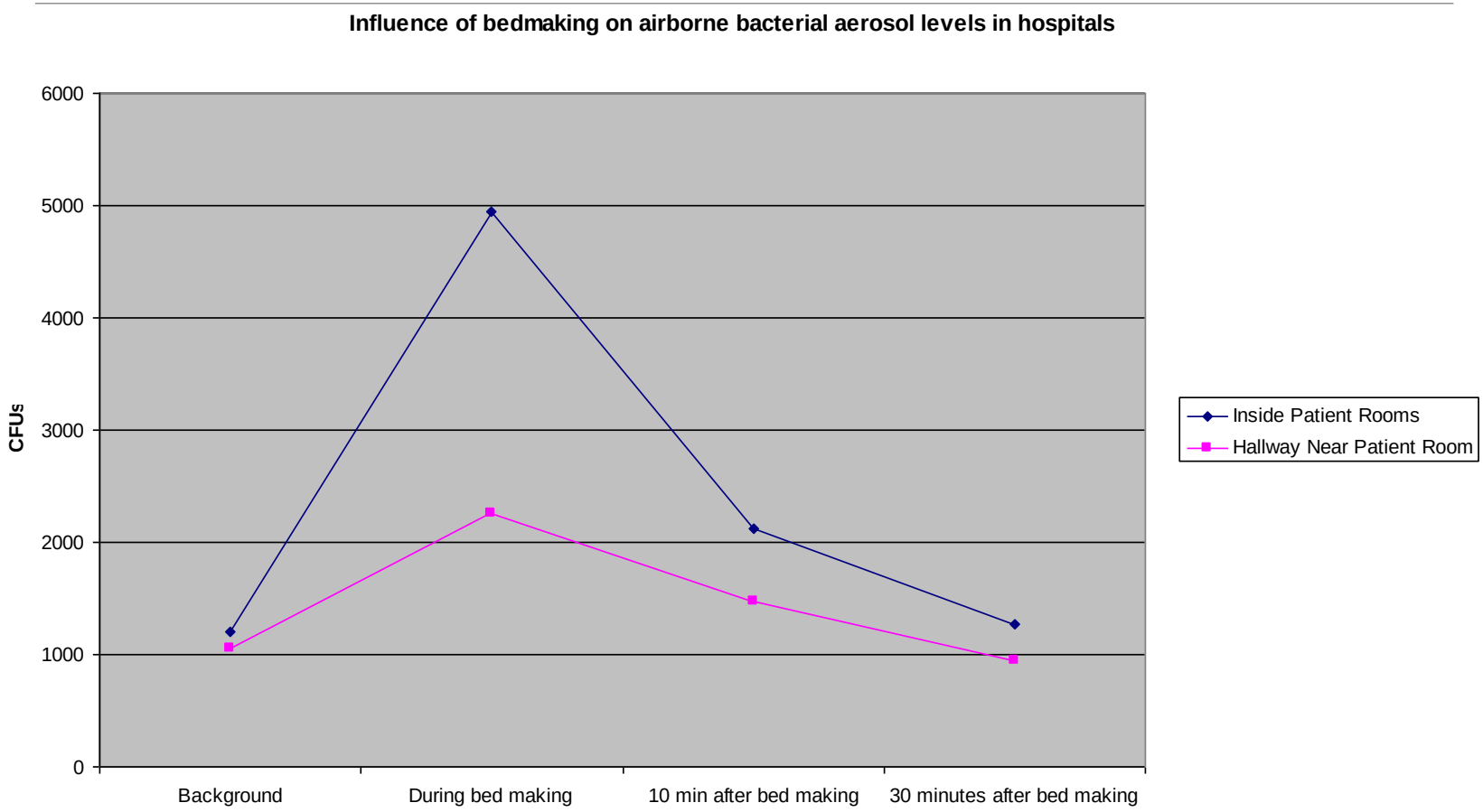
The Problem: Hospital Acquired Infections

Understanding the source of the problem leads to a solution.

The reality: Mutation of bacteria has led to anti-biotic resistance. New studies demonstrate microbial survival in conditions that previously led to their destruction (C. diff. surviving 80° C washing temperature).

- A primary source of the bacteria: The body flora of the patients.
- The mode of transmission of body flora from patient to patient: Bio-aerosol effect that occurs when the beddings are changed, when doctors make their rounds, and when nurses and visitors move from room to room in the hospital (observed but not proven).
- 9.2% of all patients will acquire an infection in the hospital. Around 2 million people a year will get a hospital acquired infections and around 100,000 of them will die. (CDC)
- Cost of treatment of patients who survive an infection has a direct impact on the cost of patient care.

Influence of Bedmaking on Airborne Bacteria Aerosol Levels in Hospitals *(University of Leeds, UK)*



The Solution to the Problem:

First step: Soft surfaces- 1st generation technology, published results - anecdotal test performed on 68 beds in a double blind study in which only patient gowns and beddings were changed.

Second step: Hard surfaces – highly absorbent self-disinfecting counter wipe that will lift bacteria off the surface and destroy them thus leaving hard surfaces microbe-free.

	2010-2011	2011-2012	Percent Decrease	P value
Total # of HAI Infections	73	49	25%	<0.05
# of times patients given Antibiotics	53	37	30%	<0.05
Total Days of Antibiotics	762	497	34.8%	<0.0001
Fever >38.5^{O}C	58	18	70%	<0.0001

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Test Results of Antibiotic Resistant Microbes

Argaman technology has been proven effective against MRSA and VRE

Proven efficacy against C. diff and Candida Auris

Argaman technology has been proven to be effective against all viruses tested

Broad spectrum including spores

Non-specific kill mechanism

Technology lasts the life of the fabric

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Technologies

Most hospital fabrics are made from cotton/polyester blends

Cotton treatment: Sonication

Polyester treatment: Master Batch White Copper

The technology is adaptable to every soft surface in the hospital and for hard surface treatments

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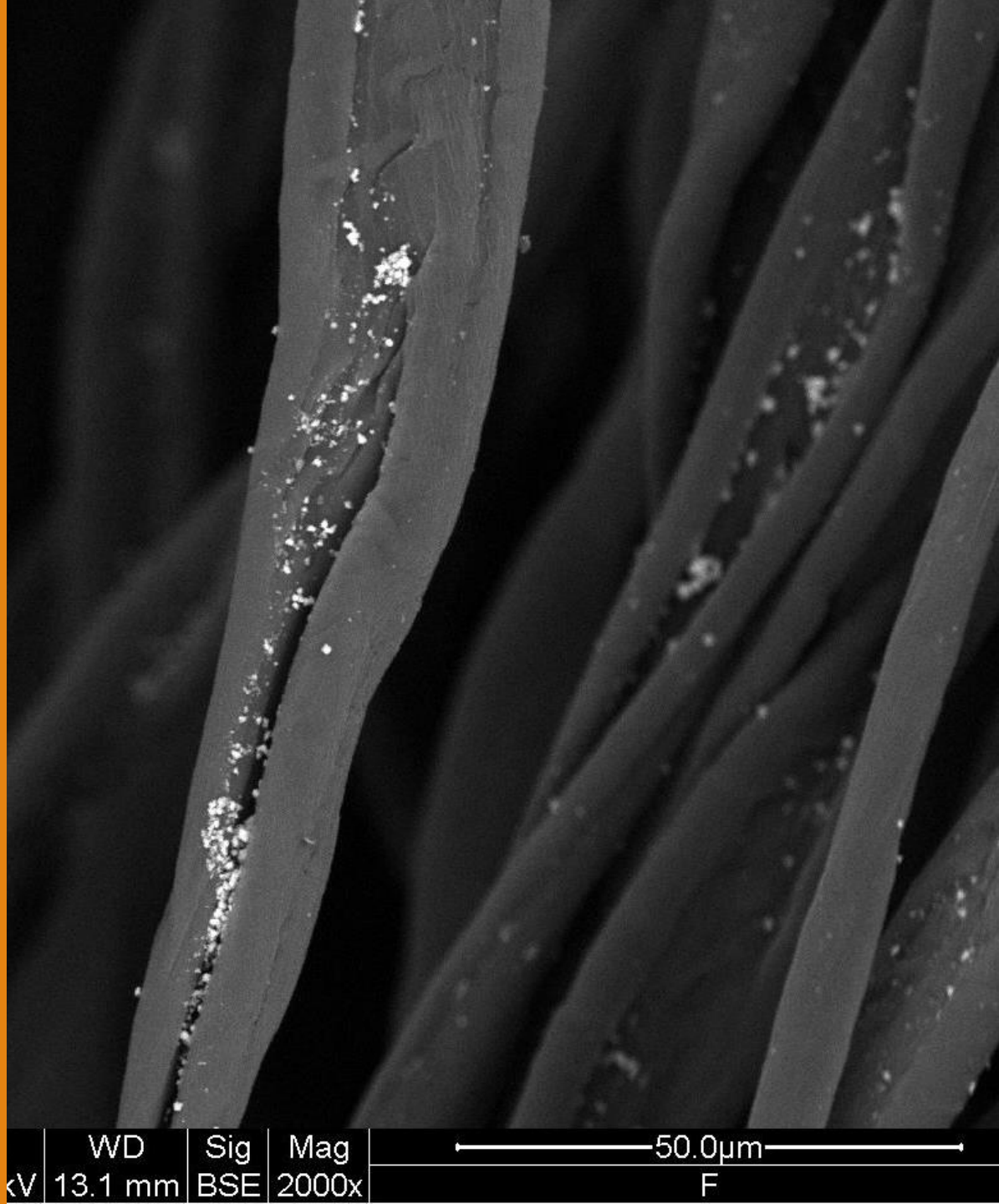
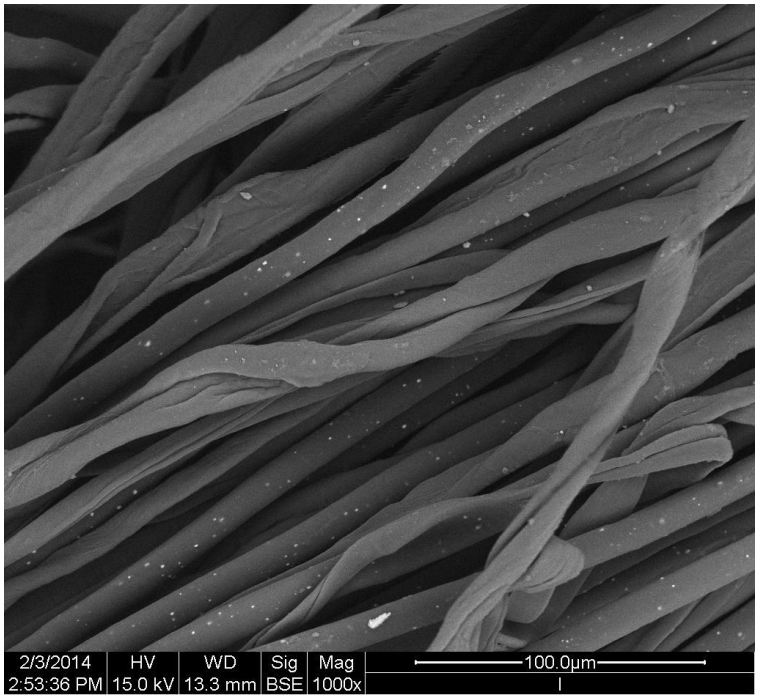
Finished Product – A Single Treated Fiber

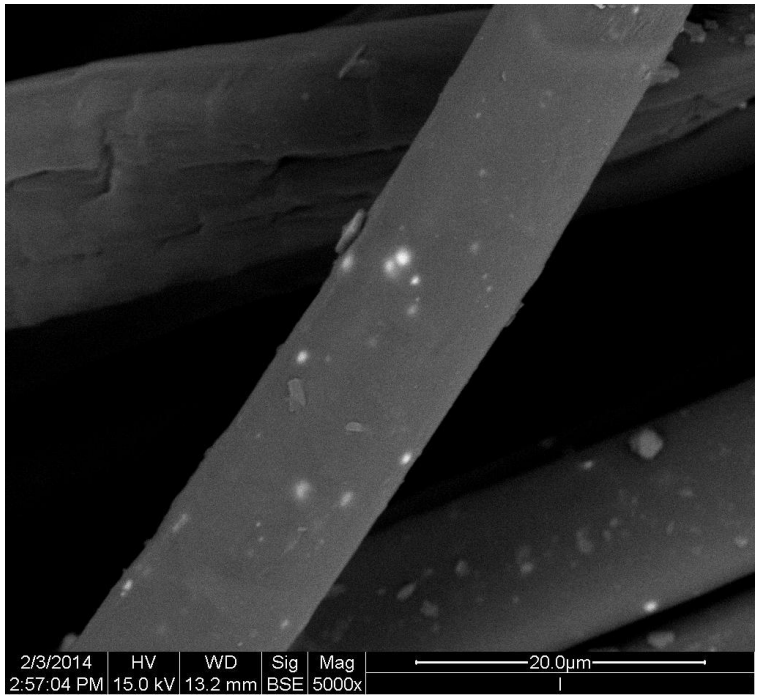


Accelerated Metal Oxide Extruded in a Fiber

COTTON/POLYESTER BLEND YARN



SINGLE POLYESTER FIBER



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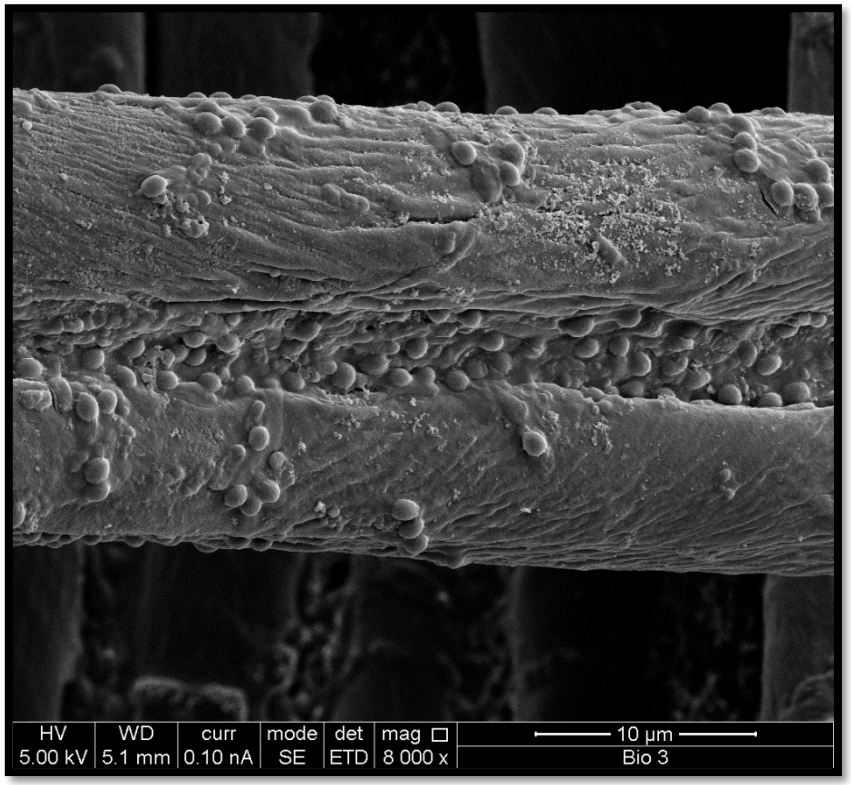
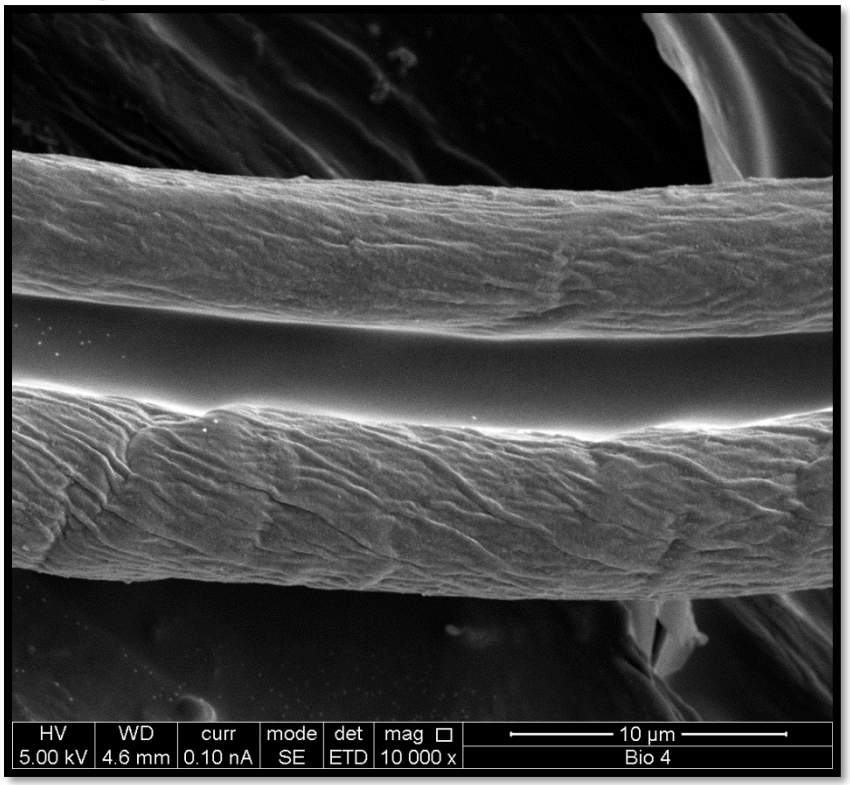
The small nodules are E. coli bacteria.

Cavitated cotton fiber. No bacteria.





Untreated Cotton

Treated Cotton

Intense Bacterial Growth

No Bacterial Growth

Additional Information

Argaman's patented accelerated formulation has demonstrated increased inhibition over other copper technologies.

In a test performed on Argaman's accelerated fabrics by the CDC at the University of Pennsylvania Medical School Hospital, the increased inhibition demonstrated 50% less bio-burden in the wards in which the bedding and patient gowns were changed.

EPA Approved

Safe and no change of any habits of use in either handling or product efficacy levels.

Argaman fabrics can be washed at room temperature with reduced use of bleach and abrasive soaps.

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Thank You

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