SYNTHESIS OF AN ANTIMICROBIAL TEXTILE COATING

By

William M. Morris

Department of Chemistry and Biochemistry

California Polytechnic State University

San Luis Obispo, CA

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Project Advisor’s Signature \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Department Chair’s Signature \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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TABLE OF CONTENTS

SECTION PAGE(S)

1. INTRODUCTION…………………………………………………………………....01-04
2. EXPERIMENTAL…………………………………………………………………....05-09
3. RESULTS AND DISCUSSION……………………………………………………...10-17
4. CONCLUSION……………………………………………………………………....18-19
5. REFERENCES……………………………………………………………………….20-21

**Abstract.**

A titania nanosol was synthesized and coated onto nylon/cotton blended textile substrates. The substrates were characterized via SEM for adhesion and nanoparticle formation, then subjected to antimicrobial efficacy tests. The titania nanosol was successfully coated on to textiles samples. Particles were observed to be around 2 by 3 micrometers and formed between the interstitial space of textile fibers. Although larger than typical nanoparticles, the coatings exhibited what seemed to be antimicrobial activity. Titania nanosol coated textile samples were subjected to Kirby Bauer Assay in the presence of *S. aureus.* The coated textile sample exhibited an inhibition of growth around its edges while the uncoated sample encouraged growth. A post-antibiotic effect was observed to be 1.2 hours on *S. aureus* when exposed to the titania coated textile.