

Supporting information

Anti-*Malassezia furfur* Activity of Natural Surfactant Mediated In-Situ Silver Nanoparticles for a Better Antidandruff Shampoo Formulation

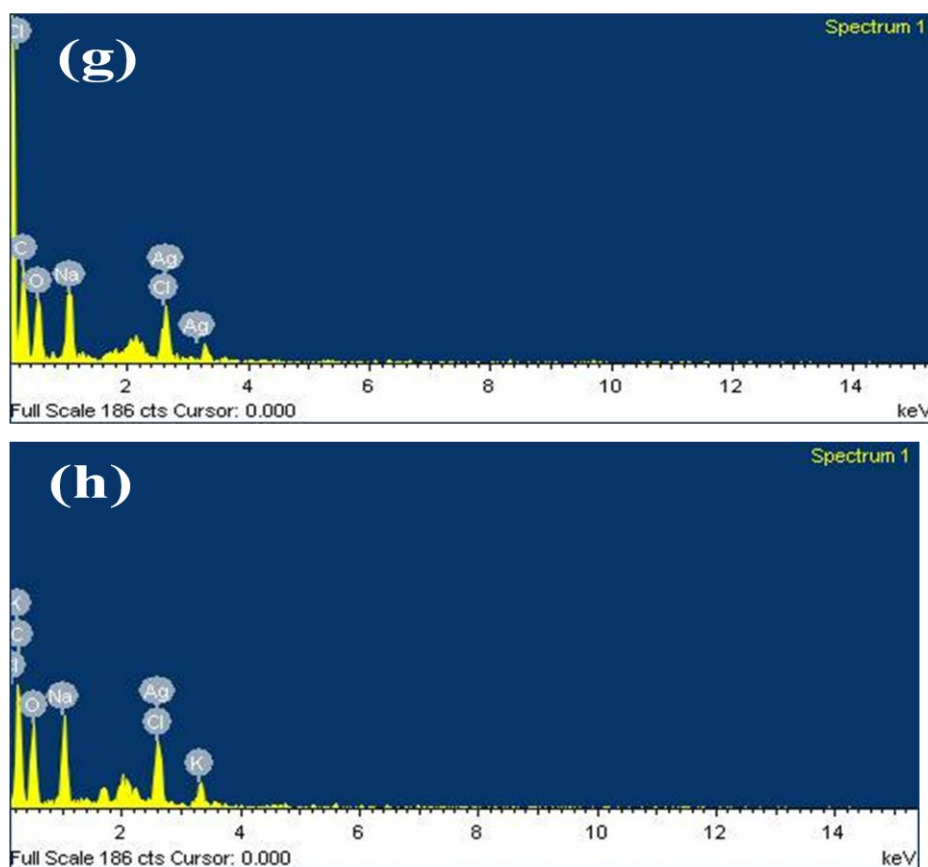
K. Jagajjanani Rao and Santanu Paria*

Interfaces and Nanomaterials Laboratory, Department of Chemical Engineering, National Institute of Technology, Rourkela–769 008, Orissa, India.

*Corresponding author. E-mail address: sparia@nitrrkl.ac.in or santanuparia@yahoo.com,

Fax: +91 661 246 2999

The EDX analysis of Ag NPs treated *M. furfur*



S1. Full images of Figure 2 (g) and (h).

I - Tetrazolium colorimetric assay

Fungal cells with strength of 5×10^5 CFU/mL in SDB media (of 0.5 mL) supplemented with various strengths AgNPs solution 0 to 0.05 mL, obtained by 3 mM AgNO₃ and adding 0.05 to 0 mL water. The total working volume now becomes 0.55 mL. The particle suspension with fungal cells were allowed for incubation at 35 °C for 12 h. Then to these solutions, TTC dye (0.1 mL form 1 % w/v solution) was added and kept for 1 h in dark at 20 °C. These were further centrifuged at 8000 rpm for 15 min and the supernatant was discarded. Later, methanol (3 mL) was added to the obtained pellets and the absorbance was measured at 460 nm spectrally.

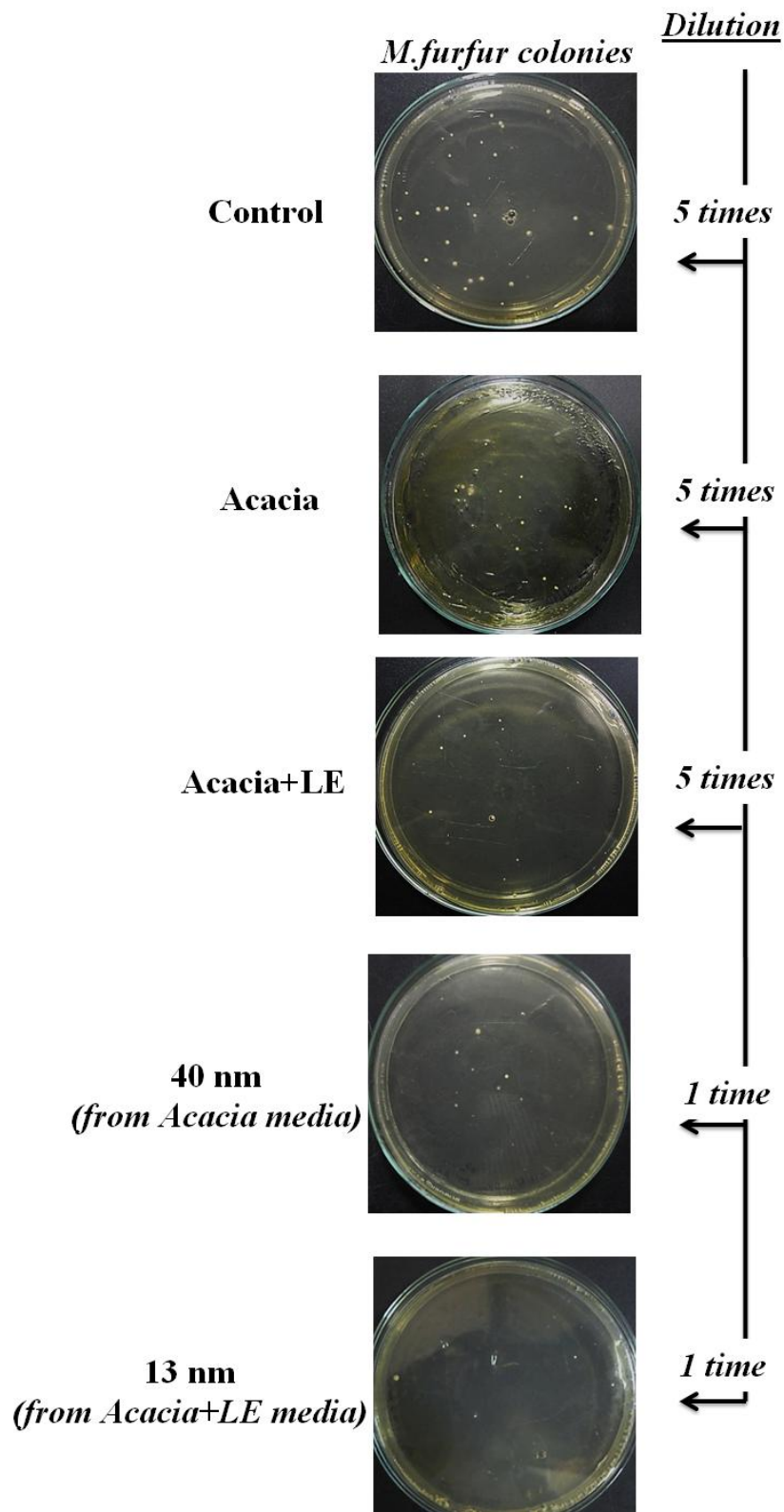


Fig. S2. *M.furfur* cells expressed as colony forming units (CFU) after treatment with and without AgNPs. Control in the figure refer to growth in SDB media without Acacia, Acacia+LE and NPs.

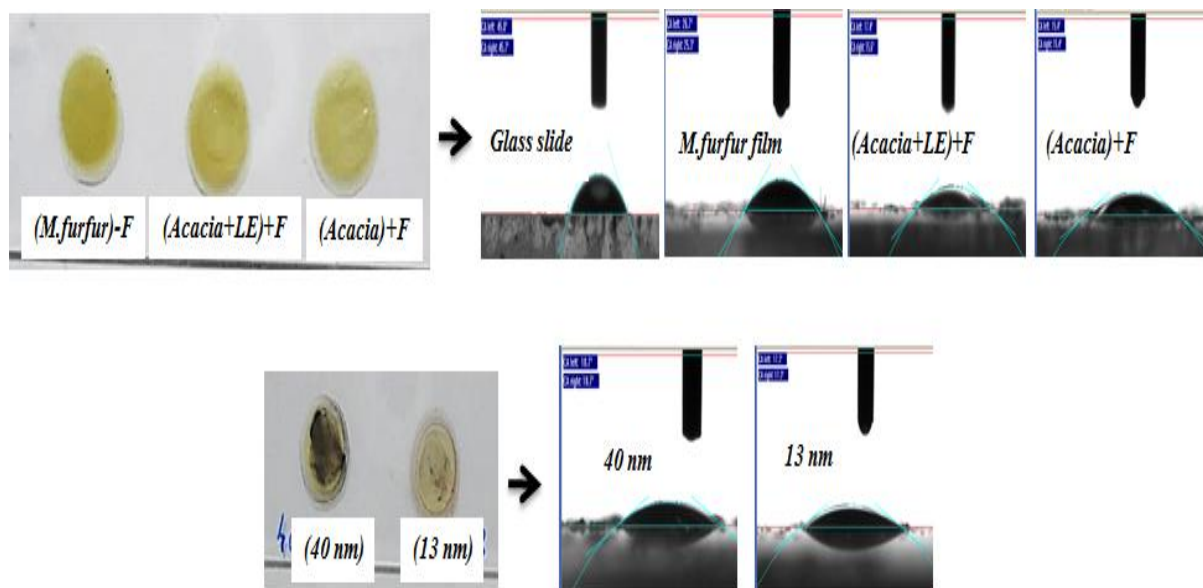


Fig. S3. Contact angle (CA) measurements of water were investigated on glass slide, *M.furfur* film (devoid of plant extracts or NPs), treated with Acacia+LE, and only Acacia media (top row images - from left to right). CA readings of in situ synthesized and stabilized AgNPs (40 and 13 nm) in Acacia and Acacia+LE media are shown (bottom row images – from left to right).

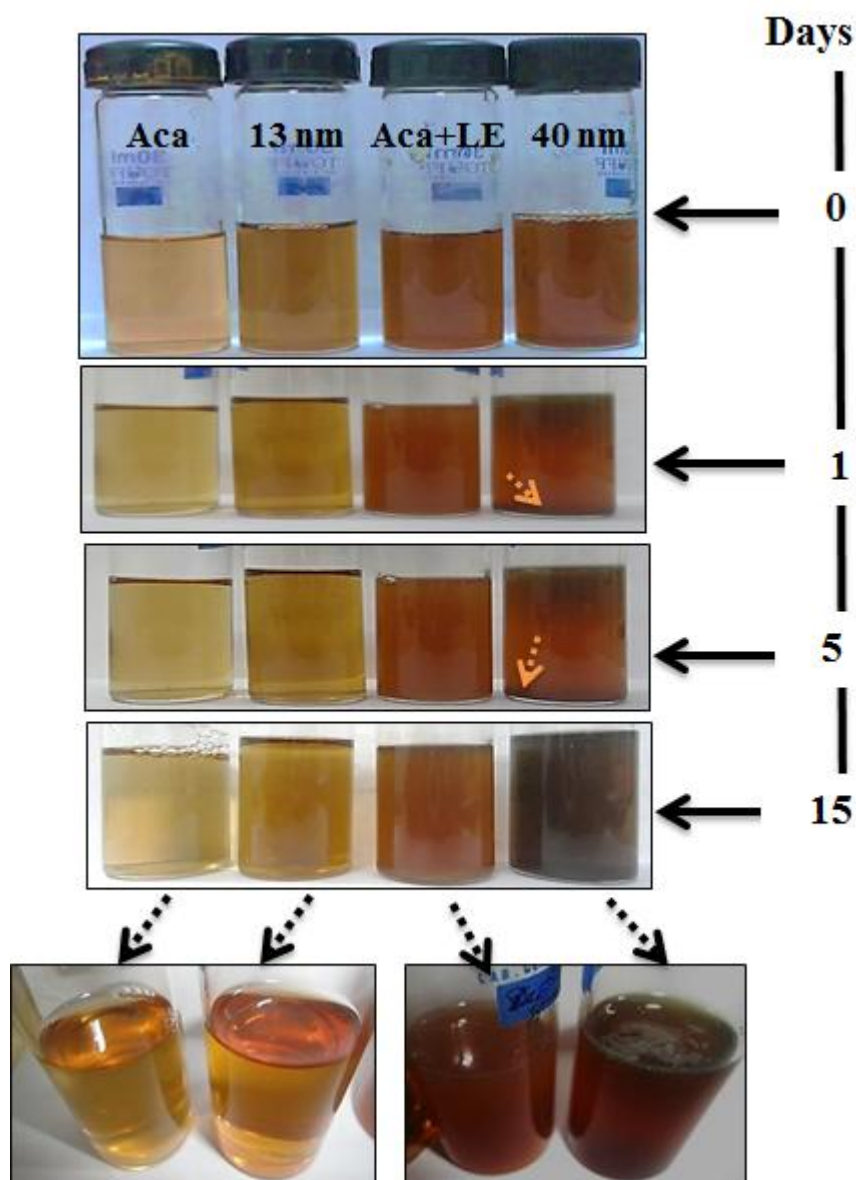
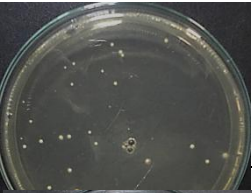
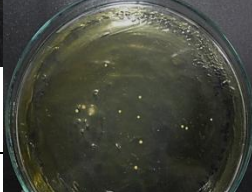
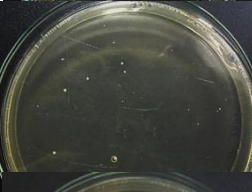

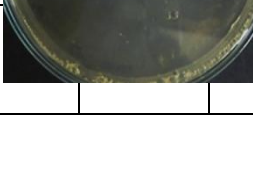


Fig. S4. Test solutions with reaction media and the supplemented AgNPs. The colour changes in the aqueous solutions at various time intervals are indicated with arrows (continuous, black). Dotted arrows (orange) display some settlement in 40 nm AgNPs supplemented media. Dotted black arrows are the test solutions after 15 day incubation, exposing the turbidity and filmy appearance by Aca+LE and 40 nm AgNPs added solution. Aca refer to Acacia in the figure.

Sample	Number of colonies				Dilution
control	31				5 times dil
acacia	23				5 times
aca+le	18				5 times
40 nm	10				1 times dilution
13 nm	4				1 times dilution