

### *E. coli* evaluation on during light induced inactivation processes

The samples of *Escherichia coli* (*E. coli* K12) was obtained from the Deutsche Sammlung von Mikroorganismen und Zellkulturen GmbH (DSMZ) ATCC23716, Braunschweig, Germany, to test the antibacterial activity of the sputtered samples. The 100  $\mu\text{L}$  culture aliquots with an initial concentration of  $\sim 10^6$  CFU  $\text{mL}^{-1}$  in NaCl/KCl (pH 7) were placed on coated and uncoated (control) polyethylene fabric. The polyester distributes the inoculum on the sample without need of an adsorption stage. A well-dispersed non-heterogeneous contact is established between the sample and the bacterial solution. The 100  $\mu\text{L}$  of the *E. coli* solution was contacted with the sample. The distribution of bacteria on the sample was observed to be perfectly homogeneous and kill the inoculated cells on contact. The exposition was done at ambient temperature. The samples were then placed on Petri dishes provided with a lid to prevent evaporation. After each determination, the fabric was transferred into a sterile 2 mL Eppendorf tube (900  $\mu\text{L}$ ) autoclaved NaCl/KCl saline solution. This solution was subsequently mixed thoroughly using a Vortex for 3 min. Serial dilutions were made in NaCl/KCl solution. A sample of 100  $\mu\text{L}$  of each CFU run was pipetted onto a nutrient agar plate and then spread over the surface of the plate using standard plate method. Agar plates were incubated lid down, at 37 °C for 24h before colonies were counted. Three independent assays were carried out for each sputtered sample. The CFU statistical analysis was performed calculating the standard deviation values. The average values were compared by one-way analysis of variance and with the value of statistical significance. The one-way analysis of variance (one-way ANOVA) was used to compare the mean of the samples using the Fisher distribution. The response variable was approximated for the sample data obtained for the bacterial inactivation under light presenting the same distribution within the same sputtering time.