Tribology of an Antimicrobial Surface in Order To Measure Efficacy Over Time

(companion research to Kern, Williams and Galopin)

Self-cleaning surfaces are employed in spaces (such as airports and hotels) in which many humans potentially spread bacteria and viruses. These materials oxidize organic matter that comes into contact with the surface when visible light strikes the surface. These surfaces are typically replaced every few months when they begin to appear worn. However, little to no information is known about the actual oxidation capacity of the surfaces at the time of replacement, thus it is not known how often they should be replaced. Our goal is to create a way to mechanically wear these surfaces so that we can quantify the wear before their efficacy vs. time is studied. We hope to gain insight into when self-cleaning surfaces ought to be replaced, thus avoiding waste while maximizing sterilization.

Peter Sheldon, Physics; Leif Kvarnes '20