

Title: Low cost self-cleaning coating for PPEs**Investigators:** Alka A. Mungray, Arvind Kumar Mungray

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Category: PPEs**Duration time:** 3 to 6 months**Budget:** 13 lacs**Remarks :**

The spreading corona virus pandemic is leading to an outbreak of another kind of pollution. For safety, gloves and masks are used as a precaution against corona virus. People across the country have started making their own masks at home with everyday materials, which seems ineffective towards such virus. Protective gloves, masks and other things are also frequently throwing up also generates a potential threat. It's not only unsightly; it potentially poses problems for the environment, for wastewater treatment plants and, at least remotely, provides a possible pathway for infecting others with the COVID-19 virus. There are already shortages of masks for medical professionals around the world, a problem that could get worse as the pandemic drags on.

Therefore, to overcome this problem a low cost self cleaning antibacterial coating is proposed on the exterior surface of the mask and gloves etc. This coating can serve as the preventive measure in controlling the transmission of COVID 19 and will increase the reusability of mask etc. The coated masks and gloves will be able to fully eradicate pathogenic bacterial and viral strains. In addition, will protect the environment.

In our lab, research is going on to prepare different hydrogels and tulsi carbon quantum dots from bio-route for different coatings.

Objectives of the proposal

Tulsi carbon quantum dots based smart hydrogel (core and shell) coating on PPE material. Proposed coating material will have antibacterial and self cleaning properties at low cost. It will reduce the wastage of masks and gloves and will increase its reusability.