

The colloid and interface science of COVID-19: a survey of ignorance

Much of the science underpinning the global response to the COVID-19 pandemic lies in the domain of colloids and interfaces. Coronaviruses are composite particles with a core of nucleic acids complexed to proteins surrounded by a protein-studded lipid bilayer shell. A dominant route for transmission is via air-borne aerosols and droplets. Viral interaction with polymeric body fluids, particularly mucus, and cell membranes control their infectivity, while their interaction with skin and artificial surfaces underpins cleaning and disinfection and the efficacy of masks and other personal protective equipment. The global response to COVID-19 has highlighted gaps in the colloid and interface science knowledge base. I will survey these gaps and suggest questions that can (and need to) be tackled, both in response to COVID-19 and to better prepare for future viral pandemics.

Reference: Poon et al., <https://arxiv.org/abs/2007.02127>, to appear in *Soft Matter*