

Soft matter physics and the COVID-19 pandemic

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Much of the science underpinning the global response to the COVID-19 pandemic lies in the soft matter domain. 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 airborne aerosols and droplets. Viral interaction with polymeric body fluids, particularly mucus, and cell membranes controls 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 soft matter knowledge base. I will survey these gaps, especially as pertaining to the transmission of the disease, and suggest questions that can (and need to) be tackled, both in response to COVID-19 and to better prepare for future viral pandemics.

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MPIDS, video conference at www.zoom.us

Meeting ID: 959 2774 3389

Passcode: 651129, [direct link](#)



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