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Application of Home-Use Plasma Devices for Antibacterial and Antiviral Surface Treatment.[1] YEVGENY RAITSES, SOPHIA GERSHMAN, SHURIK YATOM, PHILIP EFTHIMION, Princeton Plasma Physics Laboratory, HANNAH DEWALD, PATRICIA FITZGERALD-BOCARSLY, NJ Medical School, Rutgers University — It is known by now that on inanimate surfaces, infectious SARS-CoV2 virions can be detected for up to 3 days which poses challenges for limiting transmission [1]. While heat and chemicals have proven to be effective for inactivating viruses such as SARS-CoV2, those methods cannot be readily applied to all surfaces/materials which may be heat labile. Furthermore, chemical disinfectants can be harmful. To address this challenge and because of the urgency of the situation with the COVID-19 pandemic, we tested the efficacy of commercially available home-use plasma devices for the rapid and inexpensive antiviral treatment of surfaces. These devices include d'Arsonval high frequency current source [2] and plasma globe [3]. Both devices use a dielectric-barrier discharge for the plasma generation. They are already readily available for public purchase through on-line markets, and easy to use. Results of experimental characterization and antiviral tests for both devices will be presented in this talk. [1] N. van Doremalen et al., New England J. Med. 382, 1564 (2020) [2] J. Napp et al., GMS Hygiene and Infection Control 10 (2015) [3] M. Burin et al., Phys. Plasmas 22, 053509 (2015).

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