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An effective approach to reduce the penetration potential of sars-cov-2 and other viruses by spike protein: Through surface particle electrostatic charge negotiation

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The objective of this paper is to provide a mathematical model to construct a barrier that may be useful to prevent the penetration of different viruses (Eg. SARS-COV-2) as well as charged aerosols through the concept of electrostatic charge negotiation. (Fusion for the opposite types of charges and repulsion for the similar types of charges). Reviewing the works of different authors, regarding charges, surface charge densities (σ), charge mobility (μ) and electrostatic potentials of different aerosols under varied experimental conditions, a similar intensive study has also been carried out to investigate the electron donating and accepting (hole donating) properties of the spike proteins (S-proteins) of different RNA and DNA viruses, including SARS-COV-2. Based upon the above transport properties of electrons of different particles having different dimensions, a mathematical model has been established to find out the penetration potential of those particles under different electrostatic fields. An intensive study have been carried out to find out the generation of electrostatic charges due to the surface emission of electrons (SEE), when a conducting material like silk, nylon or wool makes a friction with the Gr IV elements like Germanium or Silicon, it creates an opposite layer of charges in the outer conducting surface and the inner semiconducting surface separated by a dielectric materials. This opposite charge barriers may be considered as Inversion layers (IL). The electrostatic charges accumulated in the layers between the Gr IV Ge is sufficient enough to either fuse or repel the charges of the spike proteins of the RNA, DNA viruses including SARS-Cov-2 (RNA virus) or the aerosols.