

Sophia Gershman

Bio:

Sophia Gershman is a Research Engineer with the Department of Plasma Science and Technology at the Princeton Plasma Physics Laboratory. Her expertise is in the design and diagnostics of low temperature plasma sources especially at atmospheric pressure for environmental and biological applications. She received her Ph.D. in experimental Physics from Rutgers University with research in electrical discharges in water. In addition to her research, she is a retired teacher with 30 years of teaching experience. At PPPL she participated in outreach and education programs prior to joining the research team. Her research work continues to include electrical discharges in gas bubbles in liquids and gel and atmospheric plasmas for surface decontamination. She is a team member of the Princeton Collaborative Low Temperature Plasma Research Facility and a participant in the PPPL Covid-19 initiative.

Abstract:

Plasma, the 4th state of matter, is what the stars are made of, but plasma can be also produced on earth. Cold atmospheric pressure plasma produces electrons, ions, electric and electromagnetic fields, UV radiation, and reactive atoms and molecules but can be cool enough and safe to touch. Hence, cold plasma has been explored for a variety of environmental and medical applications. Plasma can be used to disinfect air and surfaces, treat infected wounds, stimulate an immune response, or inactivate viruses for use in vaccine development. A brief look into the vast field of cold plasma will address some examples of applications and discuss how atmospheric pressure plasma can help in the current and future pandemics.