

A microscopic view of HVAC filter media, showing a purple mesh and a white mesh with small black particles. A red tool is visible in the upper left.

# TINY MAGNETS, IONIZATION, & SAFER HVAC

HVAC EXPERT SERIES

A white icon of a hand saw.

**BEYOND**  
CLEAN



David N. Schurk DES., CEM., LEED-AP.,  
CDSM., CWEP., SFP., CIAQM., HCC..

*Beyond Clean HVAC Expert Series:*

## TINY MAGNETS, IONIZATION, & SAFER HVAC

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*Director of Business Development | Global Plasma Solutions*

When it comes to helping rid hospitals of various air of pollutants, more specifically airborne viruses, what can be done? By implementing HVAC system measures such as ventilation, filtration and the addition of advanced air-cleaning technologies, engineering professionals strive to drive a wedge between building occupants and the (really-really) small airborne droplet nuclei aerosols which transport viruses, those that when inhaled can result in the transmission of disease. The HVAC system can't do much to stop someone from coughing or sneezing in your face, or to prohibit a person from touching contaminated surfaces, but through proper design it can certainly help remediate issues with the "small stuff" in the air that is of respiratory concern. Traditional HVAC ventilation and filtration can be made more effective with an advanced air-cleaning technique used in industrial and pharmaceutical cleanrooms which positively (+) and negatively (-) charges the particulates and other pollutants in the air, making them like tiny "magnets" which stick-together (agglomerate), becoming bigger and easier to move and filter from the air. This process is called "ionization" and because it makes HVAC air filters more effective, studies have shown it to also improve the efficacy of personal face masks (filters) worn by patients and staff in healthcare settings. While physically distancing ourselves from one another is important, the HVAC system can be also be used as a method to help keep people and airborne viral particles apart.

Questions? Contact David at: [david.schurk@globalplasmasolutions.com](mailto:david.schurk@globalplasmasolutions.com)

*Beyond Clean HVAC Expert Biography:*

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David serves as Director of Business Development for Global Plasma Solutions, headquartered in Charlotte NC (USA). In previous positions he worked for three of the world's largest HVAC manufactures, including Carrier, Daikin, and Trane. David is a Licensed Designer of Engineering Systems with over 38-years of experience in the design and analysis of heating, ventilating, and air-conditioning systems for a variety of market sectors, with a special focus on hospital/healthcare environmental control and indoor air quality.

He is also an ASHRAE Distinguished Lecturer, a Certified Energy Manager (CEM), a Certified Demand Side Manager (CDSM), a Certified Water Efficiency Professional (CWEP), a Certified Sustainable Facilities Professional (SFP), a Board Certified Indoor Air Quality Manager (CIAQM), and is Health Care Constructor Certified (HCCC). He is active in the American Society for Health Care Engineering (ASHE) as Member and serving on the ASHE Editorial Advisory Board, the American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE) as Member and past Chapter President, the American College of Healthcare Executives (ACHE), the Association of Energy Engineers (AEE), and many other national and regional industry associations.

David has authored numerous technical articles for industry magazines and journals including ASHRAE, Medical Construction & Design, Healthcare Design, Engineered Systems, Heating-Piping & Air-Conditioning, and others. He is a featured presenter at national, international, and regional industry associations and events.

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