



Innovative Air Pollution Control System Utilizes Existing Infrastructure to Improve Air Quality and Public Health

Imagine a world where thousands of decentralized fans force polluted air through scrubbers that filter out airborne particulates in massive quantities, greatly reducing smog and ozone, while improving air quality in many of our major cities. Now ... imagine that the infrastructure for that technology already exists, needing only a low-cost retrofitting to begin saving lives within a year.

Particulate Matter Solutions holds an exclusive patent for exactly that kind of Direct Air Capture (DAC) (aka air scrubbing) technology. The fans are already in place because our scrubbing system attaches to, and works off of, all those existing HVAC cooling units you see on virtually every commercial building on earth.

Those cooling fans are used to remove heat for both climate control and for machinery used in manufacturing. They are already pushing air into the atmosphere; we simply add a scrubbing system that leverages the Venturi effect (the fact that air under pressure pulls surrounding air into its path) to filter not just the ejected air but also ambient air in large volumes. When you remember that “heat” is a component to creating smog and that population increases the number of HVAC systems, you realize that the cooling fans are already functioning in exactly the areas where the most scrubbing is needed.

Plus, using existing fans to force air into the scrubber-filtering units means that somebody is already paying for the electricity to operate them. And by utilizing existing water in the process, companies incur no additional resource costs. Even greater economic benefits are possible since the technology allows portions of the cleaned air to be recycled back into building structures – a real advantage in helping companies meet global standards for indoor air quality.

Scale examples of our DAC have been successfully completed on 80-ton cooling towers, and the entire DAC unit is designed to be retrofitted to existing cooling tower units. Costs to install the DAC units themselves are very economical, in part because current HVAC and cooling tower

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Inventor: Robert D. Allison, III**

A system for large-scale, distributed remediation of particulate air pollution using existing building HVAC cooling towers. The system consists of a generator section which captures, redirects, and accelerates exhaust air from a cooling tower, a Venturi inlet and nozzle, and at least one air scrubber stage.

In another embodiment, a portion of the exhaust air from an HVAC cooling tower fan is used to draw atmospheric air directly into a scrubber unit that fits compactly at the top of the exhaust assembly of the cooling tower.

Particulate Matter Solutions, LLC, is a Domestic Limited Liability Company registered in the State of Georgia; Attorney Robert R. Joseph, of Atlanta, is the registered agent, and Alvin Jones is Managing General Partner.

Management Representative:

John West, World Trade Center/Orlando, FL
770.880.1918; johnw@worldtradecenter.org

Media Contact:

Michael Tucker, Plumblin Public Affairs
202.744.6116; tucker@plumblinpublicaffairs.com



Particulate Matter Solutions, LLC

service personnel will be able to install the units. Each scrubber then works off of pre-existing fans and moves billions of cubic feet of airflow each year.

Even better, and to some surprise, testing has determined that cooling fan power consumption decreased when the DAC units were used – a side effect of the Venturi effect. That result implies that even the low installation costs are likely to be recouped, over time, by reduced power costs.

While our DAC technology was developed to remove airborne particulates, additional analyses have confirmed our DAC is also a readymade platform for ozone reduction. Ozone has many similarities to airborne particulate matter, including the fact that it is produced and located in its highest concentrations of parts-per-million within urban areas. Due to the physical similarities between the two, we are able to use water as a medium to measure the amount of ozone collected.

Clearly, this solution has major social, political, and economic impacts across the globe. The global building sector continues to experience skyrocketing growth; over the next four decades, the world is expected to build 230-billion square meters in new construction – adding the equivalent of Paris every single week. That kind of rapid growth is not without consequences.

Since 2010, building-related CO₂ emissions have risen approximately one percent each year, and annually, more than four million deaths are attributed to illness from household pollution. Current data shows the United States ranks second worldwide in CO₂ emission, *only behind India*, not the as-expected China. In the U.S. alone, nearly 40 percent of all CO₂ emissions is derived from big buildings. While New York City recently passed a landmark bill designed to deliver an 80-percent slash to emissions of larger complexes, the deadline for the feat doesn't occur until 2050, after 30 years have passed. Clearly, the situation is dire, making our innovative DAC technology an obvious, logical step toward dramatic reductions in emissions from larger buildings.

Particulate Matter Solutions is actively seeking potential opportunities for patent transfer, including partners to help us quickly realize the potential while seizing what promises to be a significant worldwide market. We believe rapid deployment is vital because, despite core patent protections, limiting this device to a single source will involve complex legal – and, frankly given the health implications, moral – implications for protecting intellectual property. The ask is \$3 Billion for patent transfer plus consulting fees or percentage of sales to inventor for first 5 years.

We look forward to further discussing our innovative DAC technology and welcome opportunities to answer questions and supply supporting technical/engineering information. Contacts for business-related and media inquiries are included in our below footer.

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