Point-of-Use Water Treatment Device

The current state of the art in water treatment involves multi-component systems such as reverse osmosis (RO) which needs electricity to operate and can be water-wasteful, and activated carbon that clogs without the use of RO. These are combined (often with other components) to filter out contaminants, remove harmful pathogens and to improve taste; respectively. Such a complex system of devices makes it difficult to integrate into a single point-of-use (POU) water treatment device and also requires electrical power for pumps. Using its patent pending underlying technology, AIMM is able to fabricate a porous carbon material that can house antimicrobial nano-silver and still maintain vast porosity to enable good water permeability. When used as a filter material for contaminated water, the larger pores capture the organics keeping the smaller pores from clogging. The smaller pores house the nano-silver and keep them locked into place while the silver kills/inactivates harmful microorganisms. The technology is all powered by gravity in a simple to use, modularly flexible technology that can be fabricated into personal (or larger) POU devices. This dual-use innovation has the potential to address the POU commercial market in the developing world ($14B) or the USA ($1B); or be used by the Department of Defense to ensure utilities resiliency at Forward Operating Bases for power shortages. Additionally, it can be applied for homeland security purposes if drinking water is compromised by enemy attack or by natural disaster.

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