
Opportunity

Seeking a licensing and development partner to scale into commercial paint production.

Development Stage

Validated in a benchtop chamber system

Intellectual Property

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Breathable Paints for Indoor Air CO₂ Control in Smart Buildings

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PROBLEM STATEMENT

People release CO₂ whenever they occupy a space. Unlike many indoor pollutants, the source cannot be removed while the space is in use. Buildings rely on ventilation to keep CO₂ under control. Heating and cooling consume substantial energy from outdoor air. Elevated CO₂ can impair cognition and productivity. There is a need to reduce peak CO₂ levels without increasing ventilation demand.

SOLUTION

Researchers at Missouri University of Science and Technology have developed a paint coating that captures and releases CO₂ on its own. The coating pairs a porous silica material with amine compounds and blends this sorbent into standard latex paint. Once applied to interior walls, the coating absorbs CO₂ when a room fills with people and releases it back when the room empties, smoothing out peak CO₂ levels over the course of a day. Chamber testing confirmed the coating adsorbs and desorbs CO₂ repeatedly across multiple cycles without significant loss in capacity, and it performs even better at higher humidity.

VALUE PROPOSITION

This paint lowers peak indoor CO₂ without added equipment or increased airflow. It applies with a standard brush or roller and builds on existing latex paint formulations, so it does not require new manufacturing infrastructure. Because it works passively, the coating could lower peak CO₂ and reduce the energy used to condition outdoor ventilation air.