

SPACE LIFE SCIENCES SYMPOSIUM (A1)
Life Support and EVA Systems (6)

Author: Ms. Emily Mattox
University of Alabama in Huntsville, United States, emm0001@uah.edu

CARBON DIOXIDE AND WATER REMOVAL SYSTEM IMPROVEMENTS FOR SPACE STATION;
AN EVALUATION OF CURRENT AND CANDIDATE SORBENTS**Abstract**

Because the International Space Station will now be used until at least 2020, we are looking for better materials to replace the current sorbents in the carbon dioxide removal system (CDRA). Currently, the CDRA uses a silica gel, zeolite 13x, and zeolite 5a to remove water and carbon dioxide from the atmosphere on station. Breakthrough testing was performed on the sorbents currently being used and new materials that have been sighted for their potential use in spacecraft applications. The results from the breakthrough tests will be used to calculate the carbon dioxide or water capacity of each sorbent. The candidate materials will also be evaluated in terms of their power, mass, and volume demands. All results will be compared and a recommendation as to which sorbents should be used to replace the current sorbents on the CDRA system will be made.