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Paper Session I-C - Low-Cost, Environmentally Friendly Fire Suppression: Technology Opportunity

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1C - Commercial Use of Spaceport Technologies

Low-Cost, Environmentally Friendly Fire Suppression – Technology Opportunity

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NASA has developed a new fire extinguishing agent that is nontoxic and that does not promote ozone depletion or global warming. This new agent combines the flame cooling and oxygen displacement characteristics of water with the flame propagation inhibition characteristics of the Halons into a single, dry, free-flow microcapsule material. This material is formed by microencapsulating water in a special polymer that has flame inhibition properties and that prevents the water from evaporating before it reaches the base of the flame. The particle size can be controlled for different applications. For example, for flooding applications (e.g., fire suppression systems for critical telecommunication rooms) the particle sizes would be 10 to 40 micron, whereas for hand-held extinguishers the size range could be 100 to 200 micron. The density of the agent is greater than that of water, but it could be adjusted to fit a given application, enabling it to be delivered more effectively to the base of a flame than conventional water mist. Performance testing is continuing at the National Institute of Standards and Technology (NIST), and the latest results will be presented. NASA has filed for U.S. and foreign patents and is seeking industry partners to license the technology for commercial applications.