



Critical Analysis of the Properties of Glazing Systems with Nanosilica Gels

Abstract

Nanoporous silica aerogels are remarkable materials. They have unusually high surface area, low density, visible light transparency and are excellent thermal, electrical and acoustic insulators. This combination of properties renders them attractive for incorporation into many products, including glazing systems for building applications. This presentation will focus on analysis of a series of prototype glazing systems that include silica aerogels. Evaluation of current methods for aerogel fabrication and their potential for industrial scale-up will also be discussed.

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Mary K. Carroll is the Dwane W. Crichton Professor of Chemistry at Union College (in Schenectady, NY, USA) and the Immediate Past President of the American Chemical Society. She earned a BS in chemistry from Union College, a PhD in analytical chemistry from Indiana University, Bloomington, and performed postdoctoral research at the University of Massachusetts, Amherst. She co-directs the Union College Aerogel Lab, a vibrant and productive interdisciplinary research group. In addition to fundamental studies, the group investigates applications of aerogels in sustainable buildings, chemical sensing, drag reduction, and automotive pollution mitigation. She co-founded SunThru LLC to commercialize the aerogel technology developed at Union.