

Abstract Submitted
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Thermally insulating antimicrobial latex coating IVAN DAVILA, VASIL KUKUSHLIEV, CHAMATH DANNANGODA, MKHITAR HOBOSYAN, V. YEFREMOV V. YEFREMOV, KAREN MARTIROSYAN, None — We propose a new method of creating thermally insulating titanium dioxide-hollow glass microsphere-latex coating (paint), which also possess antimicrobial properties. With the cost of energy rising and resources becoming scarce a better thermal insulator is required that will reduce the overall cost of heating or cooling, while being able to prevent the growth of bacteria and mold. The glass microspheres, when added to latex coatings, serve as an extreme insulator. The saturation of the sterile acrylic with titanium dioxide nanoparticles and microspheres lowered the viscosity significantly from 13.46 kg/sm to 0.86 kg/sm. The mixture experienced increased thermal insulation and antimicrobial properties compared to the industrially available acrylic coatings. The coating thermal conductivity coefficient is very low about 0.01 W/K m in the ranges of 50 K to 300K. With the addition of the TiO₂ there is an antimicrobial component added. The TiO₂ antimicrobial properties are activated with the UV from natural light.

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None

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