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Determination of antimicrobial activity of textiles treated with encapsulated nano-dispersion biocidal systems

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Encapsulated Nano-Dispersion Biocidal Systems (ENBS) based on biocide master batches for controlled release of active ingredients to extend the protection of surfaces have a potential for the development of a new generation of more environmentally friendly products. ENBS will be utilized as progressive binders for functional fabrics. Newly developed ENBS textiles can prevent damage caused by microorganisms. Antimicrobial activity of textiles finished with ENBS was tested according to CSN EN ISO 20743. In textiles with ENBS, it was found that their antibacterial activity increases with time. Moreover, the higher biocidal activity was exhibited even after repeated washes at 60°C. This phenomenon can be explained by migration of biocidal components to the surface of the textile fibre. After overcoming the potential barrier due to the presence of an anionic emulsifier, the particles diffuse into the aqueous phase depending on the product solubility. The concentration of the biocide on the surface of the textile fibre increases with increasing temperature and time of washing. Textiles finished with ENBS meet requirements for long term functionality.

Biography

Katerina Klanova received her PhD from Komensky University in Bratislava, Department of Microbiology, Slovakia in 1994. She has been working at the National Institute of Public Health as a Researcher in the field of microorganisms in the environment.

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