

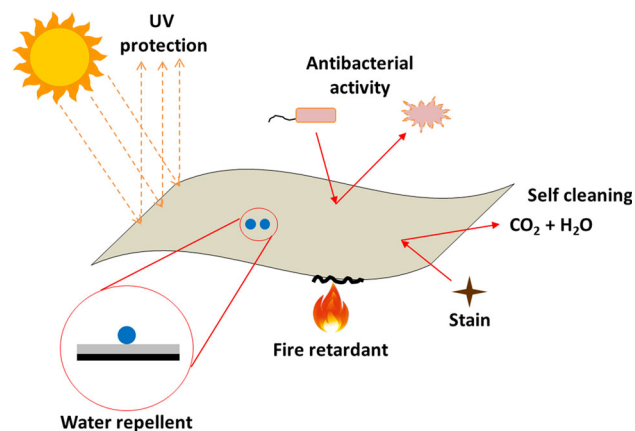
Sol-gel technology for innovative fabric finishing—A Review

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Abstract Sol-gel technology continues to interest researchers from both industries and governmental institutions in many parts of the world decades after its discovery. It offers efficient and high-purity production of nanopowders, fibres, solid structures and thin-film coatings. Possible applications of sol-gel technology can be found in a wide range of sectors, such as pharmacy, medicine, construction, aerospace, transport, food industry, optics, agriculture, semiconductor devices, catalysis and biotechnology. Also in the textile sector, sol-gel technology is expected to lead the production of fabrics with completely novel properties or the combination of various functions in one fabric. The sol-gel reaction is easy to perform and does not require special conditions and high temperatures. The reaction consists of a series of simple hydrolysis and condensation reactions. This paper presents an overview of sol-gel technology and discusses the fabric functions that can be achieved by the technology.

Graphical Abstract



Keywords Surface modification · Textiles · Fabrics · Finishing · Fabric functions