

Application of Nanofibers in Heavy Metal (HM) Filtration

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Abstract : Heavy metal contamination in water sources endangers both the environment and human health. Various water filtration techniques have been employed till now for purification and removal of hazardous metals from water. Among all the existing methods, nanofibres have emerged as a viable alternative for effective heavy metal removal in recent years because of their unique qualities, such as large surface area, interconnected porous structure, and customizable surface chemistry. Among the numerous manufacturing techniques, solution blow spinning has gained popularity as a versatile process for producing nanofibers with customized properties. This paper seeks to offer a complete overview of the use of nanofibers for heavy metal filtration, particularly those produced using solution blow spinning. The review discusses current advances in nanofiber materials, production processes, and heavy metal removal performance. Furthermore, the field's difficulties and future opportunities are examined in order to direct future research and development activities.

Keywords : heavy metals, nanofiber composite, filter membranes, adsorption, impaction

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