

# Commercialization of Nano-fiber Materials in KOREA

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Among the methods of producing nanofibers having a diameter of 1  $\mu\text{m}$  or less, electrospinning is the field of research and development most extensively in terms of mass productivity, handing process, wide selection range of raw materials, and various applications. The nanofibers have a very large specific surface area per unit volume as compared with conventional fibers, so that introduction or adsorption of functional groups on the surface can be facilitated. Also, fine particles or water vapor can be selectively transmitted through the fine pores formed. It is expected that various applications will be made in new industrial fields such as environment, energy, IT, bio, medical care, and welfare by applying these advantages. However, in spite of the diversity of materials and wide applicability, commercialization has been slowed down due to difficulties such as uniform mass production, productivity, and solvent recovery technology. In addition, it has been difficult to create a market that can realize the advantages of nanofibers. Recently, these difficulties have been overcome and commercialization is being carried out. Major success factors include high productivity, uniform mass production, and market creation through close collaboration between upstream and downstream industries. In recent years, efforts have been made to replace existing materials and create new markets by maximizing the advantages of nanofibers through convergence with existing materials. Typical commercialization fields include separation filter material, functional fabric with breathable and waterproof performance, flexible thin film for electronic part, separation membrane and energy storage material for secondary battery, nonwoven fabric for agriculture, ultra precision sensor and materials for life sciences and health care market.

## References

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