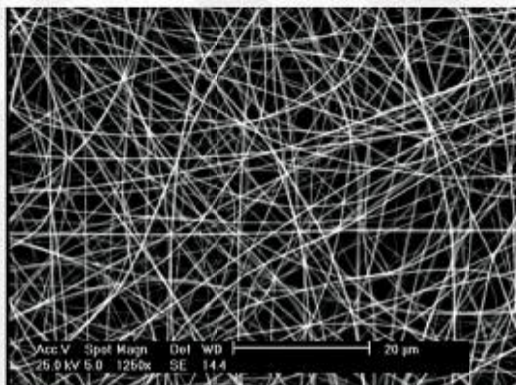


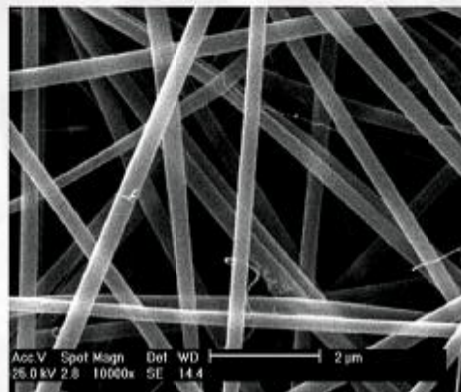
Chitosan Nanofiber

Product description

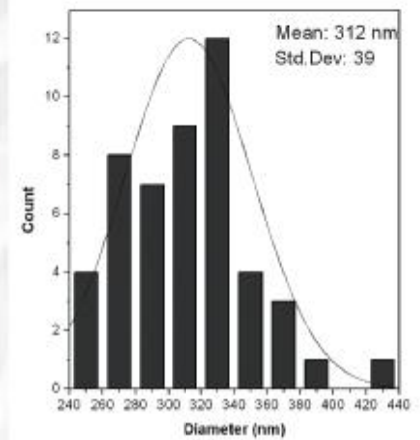
Chitosan nanofiber is particularly well known as a functional aid for the ordered regeneration of human tissues. It is a non-toxic biocompatible and biodegradable polymer, that its gradual depolymerization leads to release N-acetyl-β-d-glucosamine initiated fibroblast proliferation. Hence, it is considered as very prominent for tissue engineering applications. Chitosan-based materials possess antibacterial properties and high sorption capacity. The higher surface area and small pore size of chitosan nanofiber provide effective water retention and prevent infection, working as biological filters.



SEM image, magnification: 1260 x



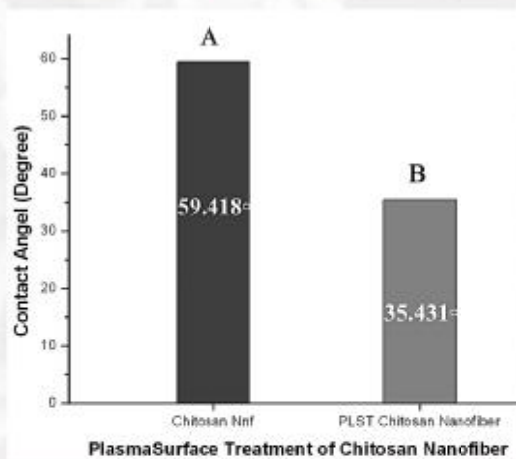
SEM image, magnification: 10000 x



Fiber Diameter Distribution

Application

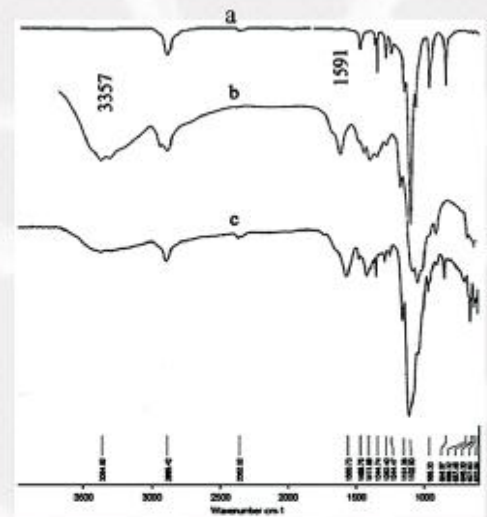
Filters | Sensors | Wound dressings | Controlled release carriers | Biodegradable Scaffolds



Before Plasma Treatment



After Plasma Treatment



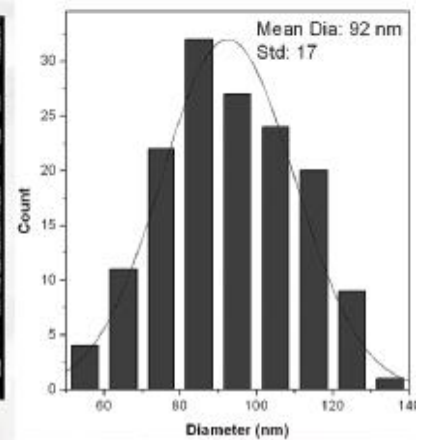
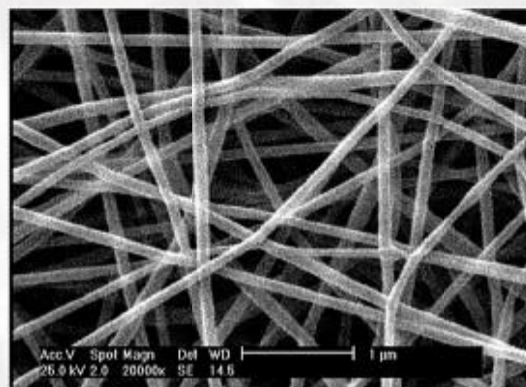
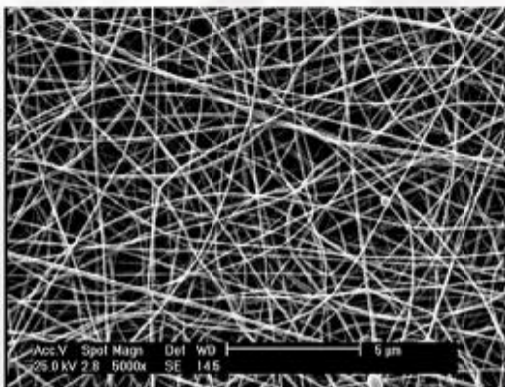
FTIR spectra of : a) PEO nanofiber, b) Chitosan/PEO nanofiber, c) Chitosan

Our researchers at FNM.Co R&D department are capable of producing chitosan nanofiber membrane in different grammage and diameter in accordance to customers demand. Please feel free to contact us for more info. (nanofiber@fnm.ir)

Poly (ϵ -caprolactone) (PCL) Nanofiber

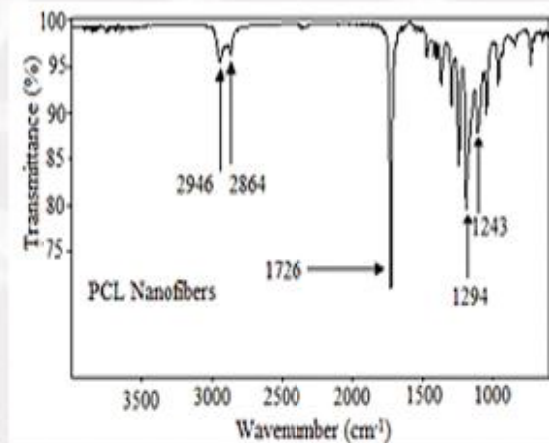
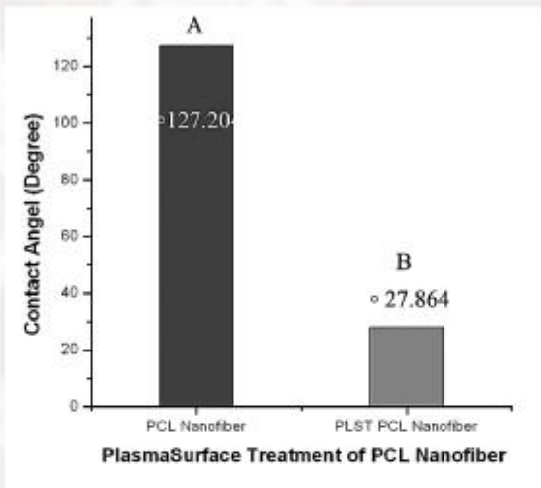
Product description

PCL is a semi crystalline linear hydrophobic polymer. This biodegradable material finds many applications in biomedical science owing to its superior mechanical properties, good biocompatibility, and complete degradation to nontoxic by-products. It also has been used for improving elasticity because of its crystalline rubbery property. PCL has the slower erosion rate of nanofiber matrices among the well-known biodegradable polyesters such as PGA, PLGA, and PLA. The pore size, high porosity and 3-dimensionality of PCL Nanofibers mimic the natural extracellular matrix, thereby improving cellular adhesion, proliferation, migration and function



Application

Cell culture growing media | Implantable materia | bone fixtures | Biodegradable scaffold



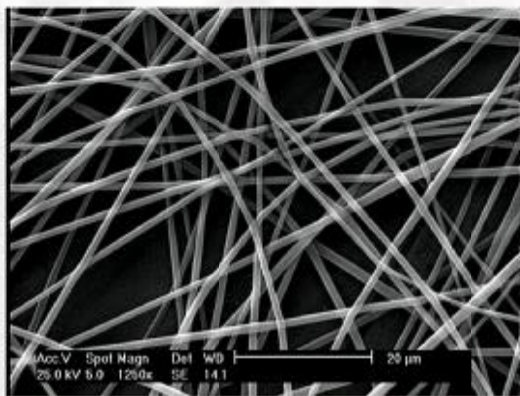
FTIR spectra of PC

Our researchers at FNM.Co R&D department are capable of producing PCL nanofiber membrane in different grammage and diameter (in accordance to customers demand. Please feel free to contact us for more info. (nanofiber@fnm.ir)

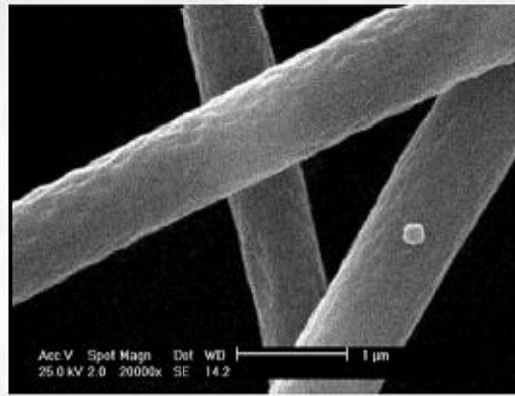
Poly(lactic acid) (PLA) Nanofiber

Product description

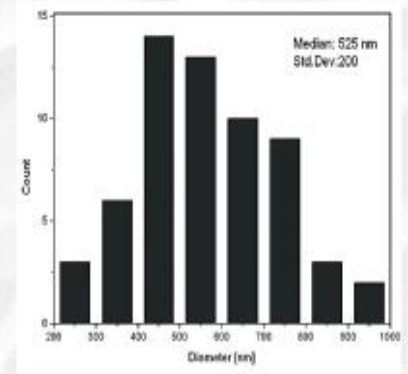
Poly lactide (PLA) has been considered as one of the most interesting and promising biodegradable materials. PLA nanofibrous layer in vivo has a tremendous advantage over traditional ones due to the fact that PLA can be metabolized completely inside the body. This layer can be deposited on the top of a supporting substrate in different shapes or can be blended with other biopolymer materials such as Gelatin, Chitosan, poly(caprolactone) (PCL) and other biopolymers for highly improved properties.



SEM image, magnification: 1250 x



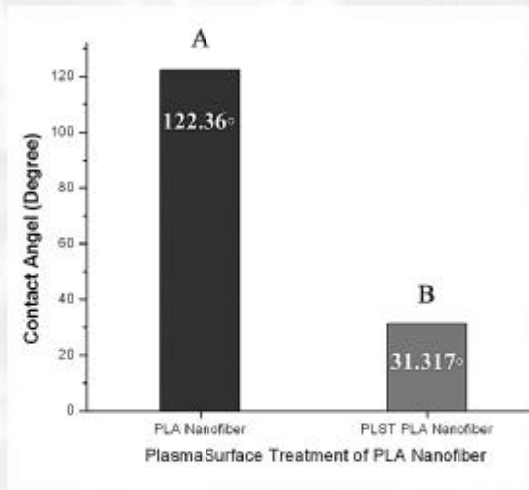
SEM image, magnification: 20000 x



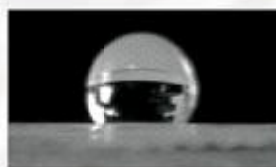
Fiber Diameter Distribution

Application

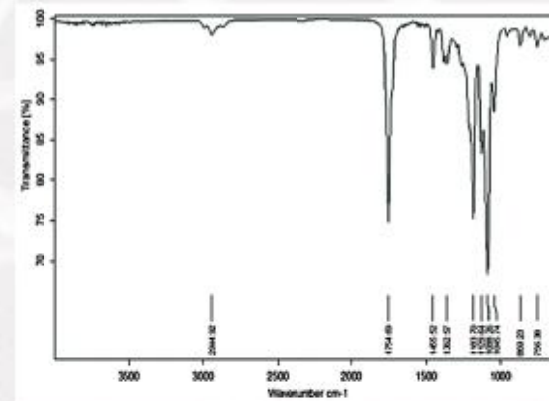
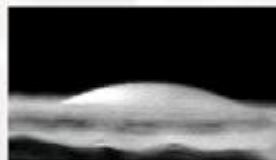
surgical sutures | drug-delivery vehicles | bone fixtures | tissue scaffolding.



Before Plasma Treatment A



After Plasma Treatment B



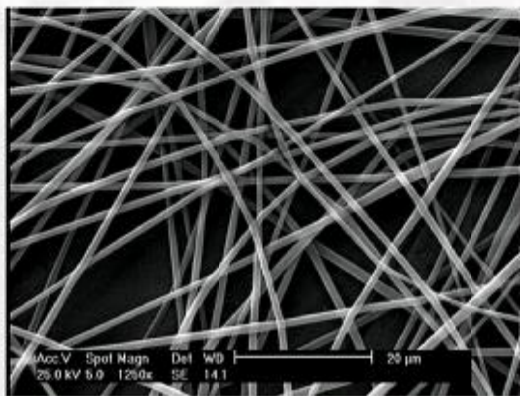
FTIR spectra of PLA nanofiber

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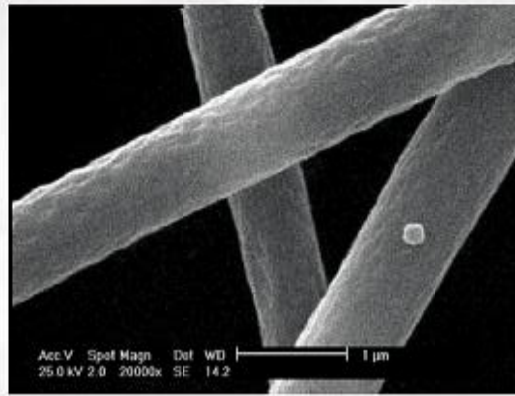
Poly(lactic acid) (PLA) Nanofiber

Product description

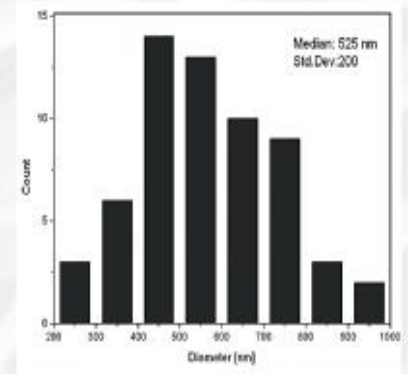
Poly lactide (PLA) has been considered as one of the most interesting and promising biodegradable materials. PLA nanofibrous layer in vivo has a tremendous advantage over traditional ones due to the fact that PLA can be metabolized completely inside the body. This layer can be deposited on the top of a supporting substrate in different shapes or can be blended with other biopolymer materials such as Gelatin, Chitosan, poly(caprolactone) (PCL) and other biopolymers for highly improved properties



SEM image, magnification: 1250 x



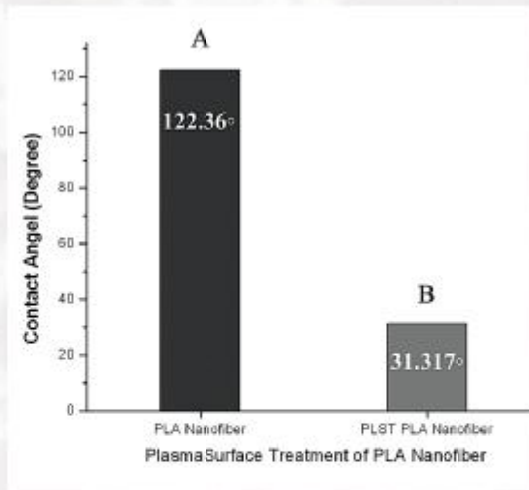
SEM image, magnification: 20000 x



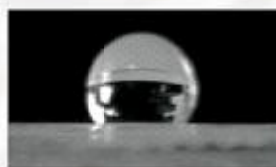
Fiber Diameter Distribution

Application

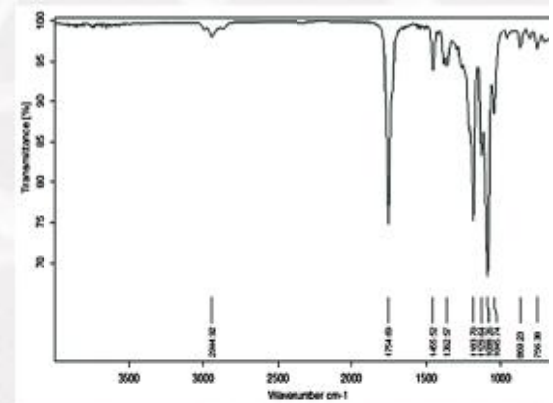
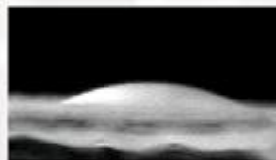
surgical sutures | drug-delivery vehicles | bone fixtures | tissue scaffolding.



Before Plasma Treatment A



After Plasma Treatment B



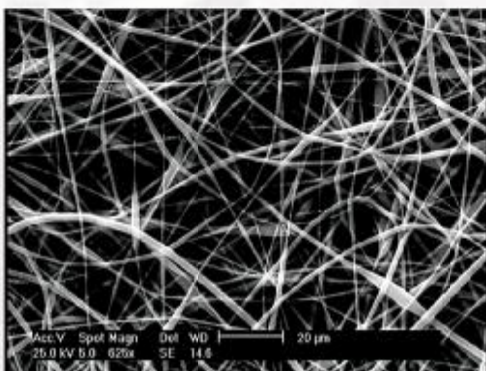
FTIR spectra of PLA nanofiber

Our researchers at FNM.Co R&D department are capable of producing PLA nanofiber membrane in different grammage and diameter in accordance to customers demand. Please feel free to contact us for more info. (nanofiber@fnm.ir)

Poly (lactic-co-glycolic acid) (PLGA) Nanofiber

Product description

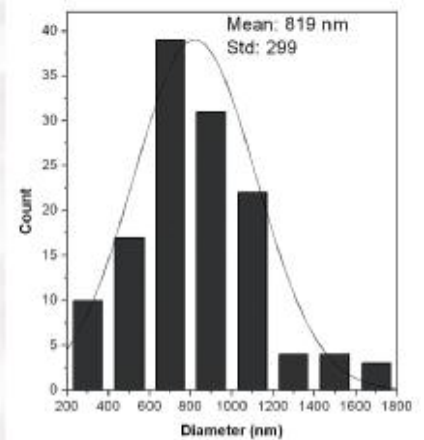
Poly (l-lactide-co-glycolide) (PLGA) polymer is the random copolymer of glycolide (G) and lactide (L) acid. PLGA has good controllable biodegradability and biocompatibility and good the mechanical properties. Electrospun PLGA nanofibers have attracted much interests because it is easy to control nanofibers structure (shape and porosity), high surface area-to-volume ratio and morphological similarity to natural extracellular matrix (ECM), controllable degradation rate, non-cytotoxic in vivo as well as in vitro and non-inflammatory. With high surface to volume ratio, electrospun PLGA nanofibers have been proposed for cell capture.



SEM image, magnification: 625 x



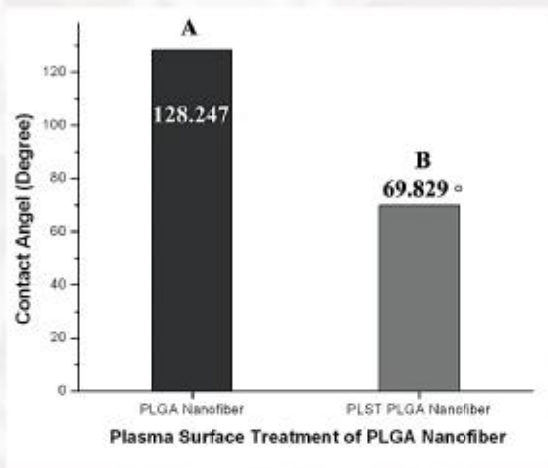
SEM image, magnification: 5000 x



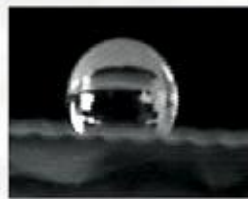
Fiber Diameter Distribution

Application

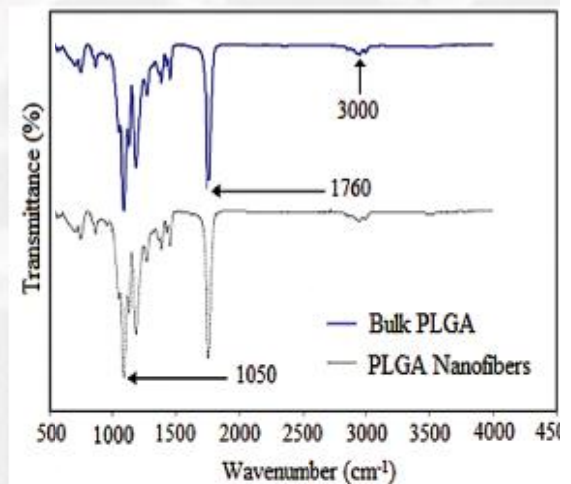
Scaffold for skin tissue engineering | Nerve regeneration | Vessel engineering | Bone regeneration



Before Plasma Treatment A



After Plasma Treatment B



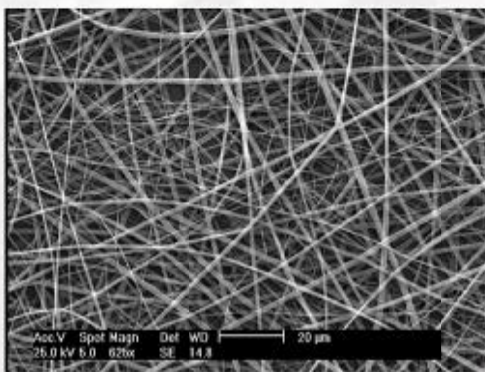
FTIR spectra of PLGA nanofiber

Our researchers at FNM.Co R&D department are capable of producing PLGA nanofiber membrane in different grammage and diameter in accordance to customers demand. Please feel free to contact us for more info. (nanofiber@fnm.ir)

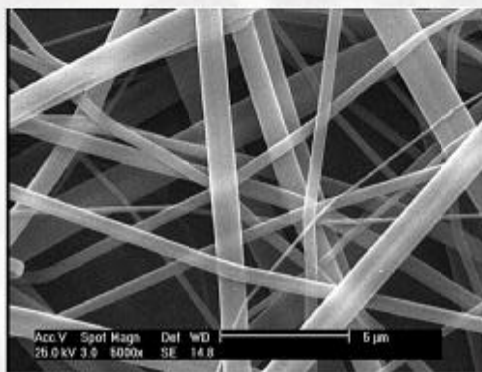
Polyvinylpyrrolidone (PVP) Nanofiber

Product description

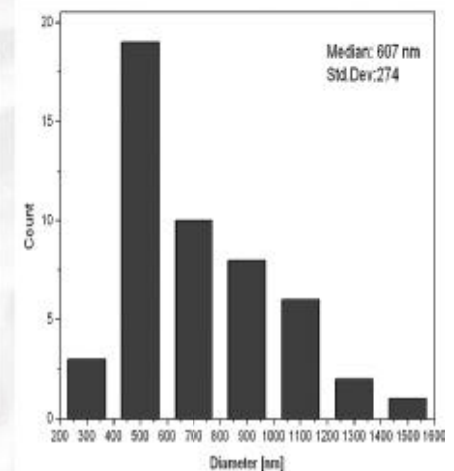
PVP is an important synthetic polymer with good complexation and adhesion properties, excellent physiological compatibility, low chemical toxicity, and reasonable solubility in water and most organic solvents. It is, therefore, widely used in many industries such as pharmaceuticals, cosmetics, beverages, adhesives, detergents, paints, electronics, and biological engineering materials. PVP has been broadly used as a template for preparing functional nanofibers for applications such as drug-containing nanofibers, inorganic-organic composites inorganic nanofibers, precursors for organic peroxide nanofibers and liposomes



SEM image, magnification: 625 x



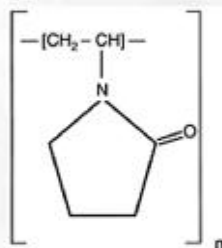
SEM image, magnification: 5000 x



Fiber Diameter Distribution

Application

As a template for preparing functional nanofibers (drug-containing nanofibers) | Precursors for organic peroxide nanofibers | Pharmaceutical fields as excipient, such as binder in tablet and granular | Co-precipitant for poorly soluble drugs | Stabilizer for enzyme | Heat sensitive drugs and lubricator



Chemical Structure of PVP

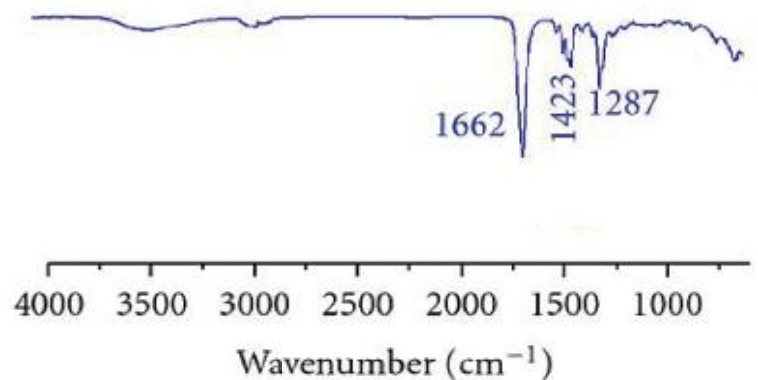


Fig 5.FTIR of PVP nanofiber

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