



ANPOLY
Advanced Natural Polymer



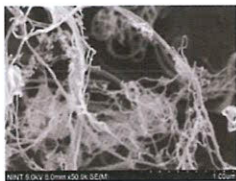
Eco-friendly New Biomaterial Company for a Sustainable Earth



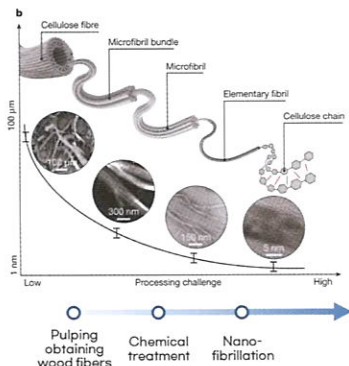


NANOCELLULOSE

Nanocellulose is an eco-friendly material from cellulose, nano-fiberized to be 5x stronger and lighter than iron. It replaces plastics with sustainable CNF (cellulose nanofibers) from organic biomass sources like rice husks. Transparent, biodegradable, and gas-resistant, it revolutionizes industries from auto parts to medical devices by enhancing strength and reducing material use. Adaptable and eco-conscious, it shapes a greener, high-performance future.



Fiber into nano scale



- Strong** 5x stronger than iron
- Light** 5x lighter than iron
- Flexible** Transparent and flexible material
- Gas barrier** Excellent gas barrier and heat barrier properties
- Sustainable** Reduction of raw materials and carbon emissions
- Safe** Biodegradable, non-toxic

Product line



	Slurry			Powder		
	T-CNF	E-CNF	A-CNF	T-CNF	E-CNF	A-CNF
Surface modification	Carboxylated	-	Acetylated	Carboxylated	-	Acetylated
Density	2wt%	2wt%	1wt%	> 95wt%	> 95wt%	> 95wt%
Viscosity (6rpm,25°C)	> 70,000cP	> 1,000cP	> 10,000cP	-	-	-
pH	6~8	4~5	6~8	-	-	-
Average diameter /particle size	< 6nm	< 10nm	< 10nm	1-50um	1-50um	1-50um
Hydrophilic	●●●●●	●●●○○	●○○○○	●●●●●	●●●○○	●○○○○
Dispersibility (water)	●●●●●	●●●○○	●○○○○	●●●●●	●●●○○	●○○○○
Character	High viscosity and thixotropy High dispersibility and transparency High gas barrier properties	Improved mechanical strength High thermal properties	Hydrophobic Improved mechanical strength High thermal properties	High redispersibility (water)	Improved mechanical strength High thermal properties	Hydrophobic Improved mechanical strength High thermal properties
Main uses	Cosmetics, Ink, Film Paint, Coating, Medical Bio, Secondary battery Construction (concrete, cement)	Cosmetics, Food additives, Films, Packaging materials, Coatings, Compound (reinforcement, strengthening)	packaging material,ink, Paint, Compound (reinforcement, strengthening)	Cosmetics, Ink, Film Paint, Coating, Medical Bio, Secondary battery Construction (concrete, cement)	Cosmetics, Food additives Films, Packaging materials, Coatings, Compound (reinforcement, strengthening)	packaging material,ink, Paint, Compound (reinforcement, strengthening)

Eco-Friendly New Biomaterial presented by ANPOLY



ANPOLY is developing production process and scale up technology to supply high-quality nanocellulose. Making all process systems automated, we commit to manufacturing reliable and customized production capabilities.

VISION & PHILOSOPHY



VISION



Market Leader

Global leading provider of biocompatible nanocellulose products through innovative material platform

MISSION



Green Technology

Applying advanced new materials to all industries and further create a safe and sustainable global environment for future generation

PHILOSOPHY



Sustaining our planet

Supporting customers to develop eco friendly products with less carbon emission & plastic usage

SOLUTION & BUSINESS AREA



The value



High Durability



Gas Barrier



Lightweight



Invisibility



Nontoxicity



Biocompatibility



Functionality



Biodegradability



Re:ancel™

The Application



Vehicle In/Exterior & Composite Materials



Secondary Battery



Cosmetics/Bio/Medical



Eco-Friendly Functional Packaging Materials

CORE COMPETENCE



Highest quality nanocellulose manufacturing technology



EXCELLENT PHYSICAL PROPERTIES



OPTICAL PROPERTIES



Biodegradability



NON-TOXICITY

The sustainable, adaptable, and biodegradable attributes position of ANPOLY's materials as a catalyst for positive change across industries where synthetic polymers, like plastics, can be replaced by extracting cellulose nanofibers (CNF) from previously discarded materials.

Adaptability: The versatility of CNF encompasses automotive, medical, cosmetic, and packaging sectors, bridging gaps between contrasting fields. By enhancing existing products and processes while reducing raw material consumption.



Biocompatibility Applicable to bio, cosmetics, medical devices, etc.

Cytotoxicity tested negative



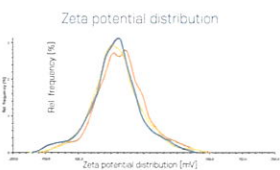
No In Vitro Skin Irritation



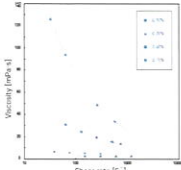
No heavy metals detected



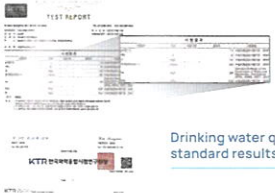
High Purity Excellent physical properties and high purity



High dispersibility



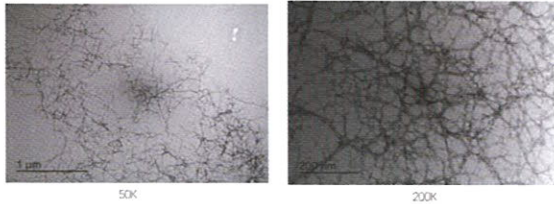
Viscosity characteristics by concentration
Thixotropy: Viscosity change depending on shear rate



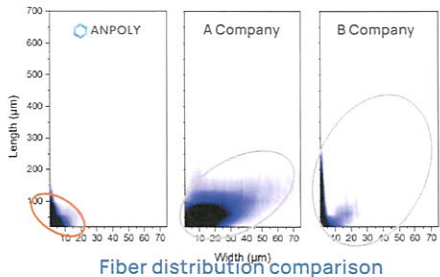
Drinking water quality standard results

Uniformity Nanofiber distribution of uniform size compared to competitors

NS-TEM measurement result Fiber Width average 2-9nm



Average thickness: 5 nm, average length: over 700 nm



Fiber distribution comparison

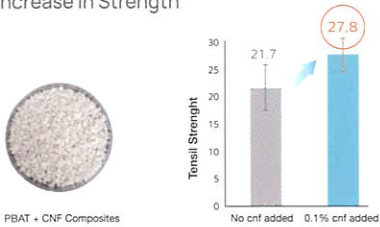


Sustainable Plastics

Used as eco-friendly additive that reduces the consumption of existing plastic materials and strengthens physical properties

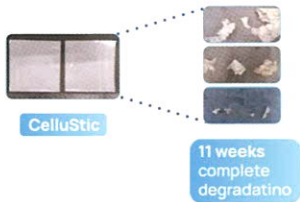
25.7%

Increase in Strength



PBAT + CNF Composites

ANPOLY CelluStic® Biodegradation process



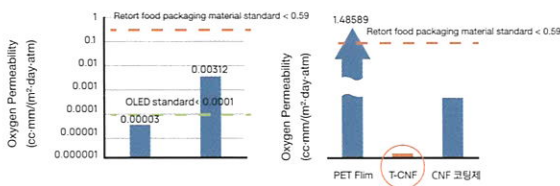
Biodegradation Certified by DIN CERTCO



Improved Gas Barrier Properties for Films and Coatings

Improved gas barrier properties of nanocellulose-applied films that can even be used as vacuum insulation materials

Coated film gas barrier properties



High transparency functional coating

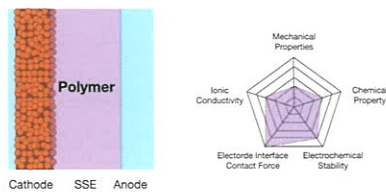


Rechargeable Battery Separation Membrane

Development of nanocellulose-based solid electrolyte with excellent safety and performance

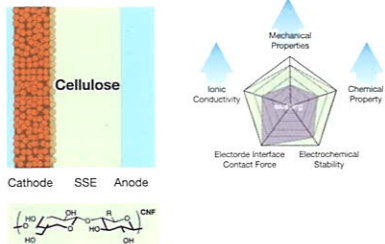
Current Polymer Electrolytes

Existing polymer electrolyte forms a good interfaces, however gas limitations in performance and stability



CNF Based Solid Electrolyte

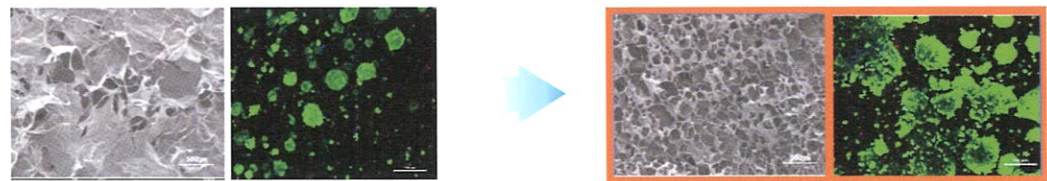
High performance & stability compared to existing polymer electrolytes



Cultured Meat Scaffold

Improved cell activity and formation of highly dense structures (improved texture)

Shortened culture period, reduced culture medium, improved tissue density



Before w/o CNF scaffold

After using CNF scaffold



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Advanced Natural Polymer

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