

All the tables were credited by the first author in this book chapter.

Table 1: The solvent and solvent-free electrospinning apparatus.

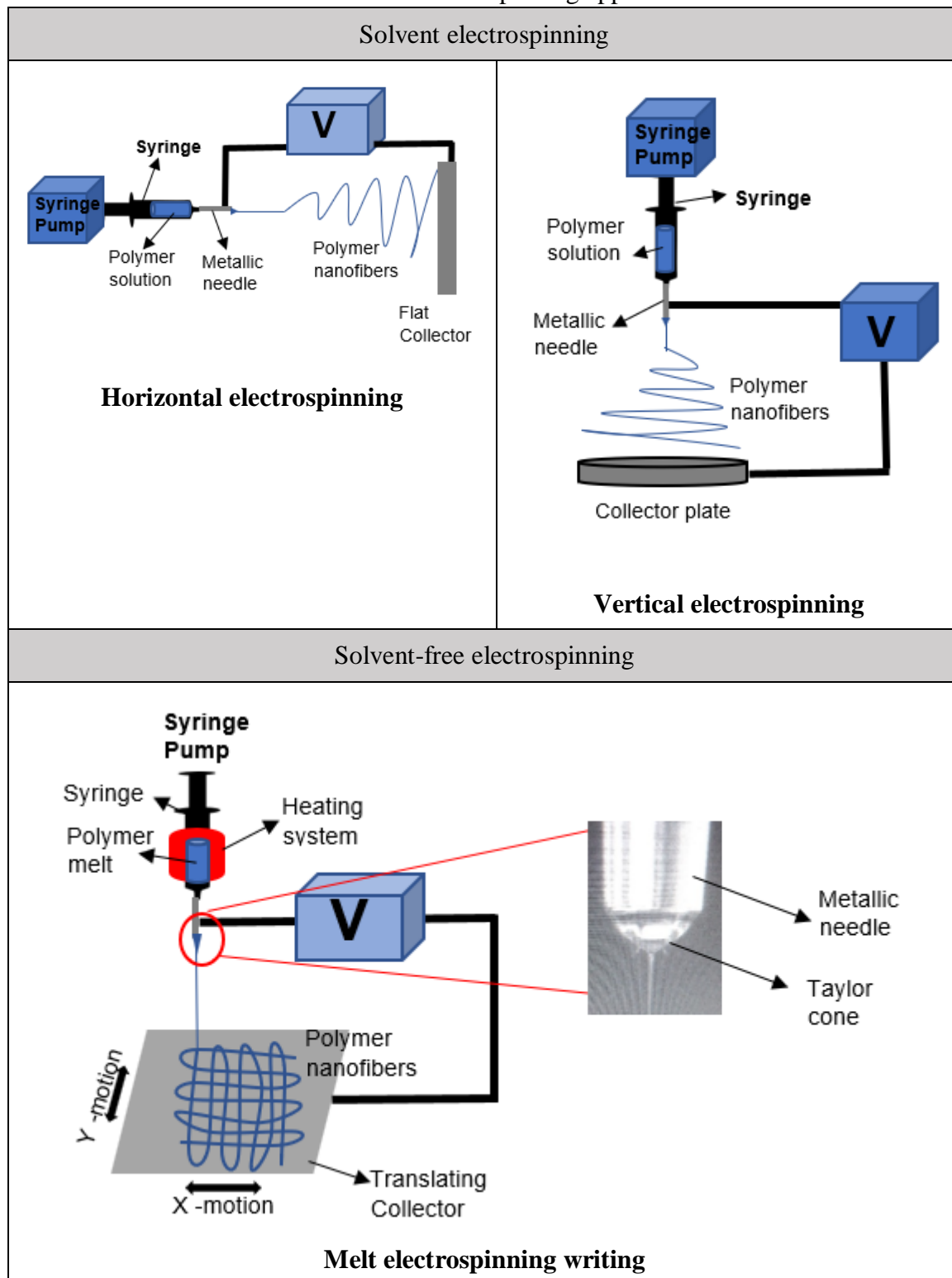


Table 2 : List of natural polysaccharide.

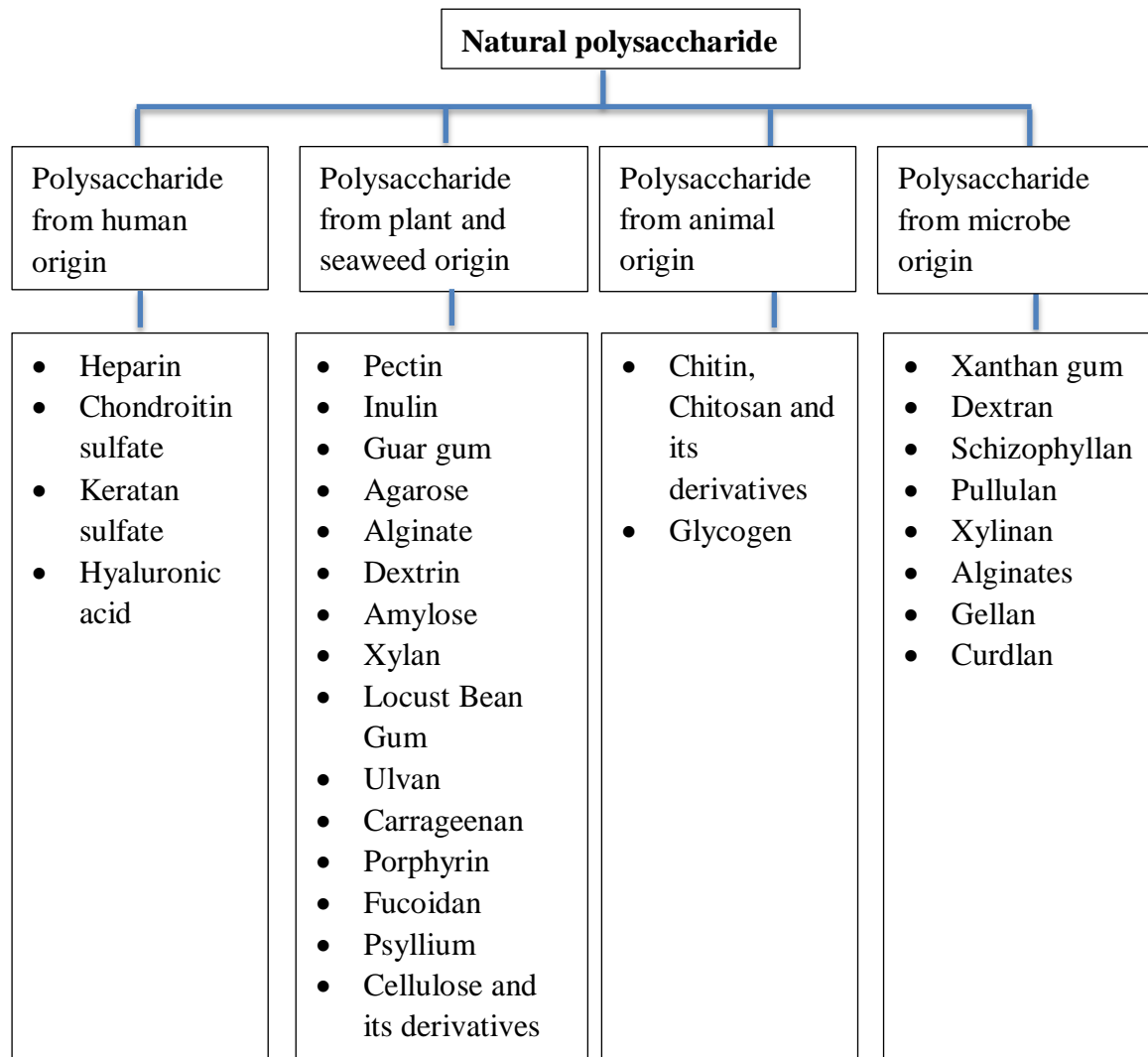


Table 3: The researches of natural polysaccharide from human origin and their potential applications.

Natural polysaccharide from human origin	Additive polymer	Solvent	Potential applications	Reference
Heparin	Gelatin	Distilled water and acetic acid	Vascular Tissue Engineering	[16]
	PLLA ¹ and PA-6 ²	HFP ³	Achilles Tendon Regeneration	[17]
	PLLACL ⁴	TFE ⁵ and distilled water	Blood vessel tissue engineering	[18]
Chondroitin sulfate	PVA ⁶ /gelatin	Distilled water and acetic acid	Tissue engineering	[19]
	Gelatin	TFE ⁷ and distilled water	Skin tissue engineering	[20]
	PVA	Distilled water	Tissue engineering	[21]
Hyaluronic acid	Silk fibroin	Formic acid and distilled water	Scaffolding and drug release	[22]
	PCL ⁸	Chloroform and formic acid	Skin tissue engineering scaffolds	[23]

¹ Polylactic acid

² Polyamide-6

³ Hexafluoro isopropanol

⁴ Poly(L-Lactide-co-ε-Caprolactone)

⁵ 2,2,2-Trifluoroethanol

⁶ Poly (vinyl alcohol)

⁷ Trifluoroethanol

⁸ Polycaprolactone

	PEO ⁹	Acetic acid	Tissue regeneration	[24]
	Type I porcine collagen and gelatin	NaOH ¹⁰ , DMF ¹¹ and acetic acid	Skin tissue engineering	[25]

⁹ Polyethylene Oxide

¹⁰ Sodium hydroxide

¹¹ Dimethylformamide

Table 4: The researches of natural polysaccharide from plant origin and their potential applications.

Natural polysaccharide from plant and seaweed origin	Additive polymer	Solvent	Potential applications	Reference
Pectin	PVA	Distilled water	Skin regeneration or drug carriers	[26]
	PEO	Distilled water	Tissue engineering	[27]
Inulin	PVA	Distilled water	The treatment of digestive disorders, antiseptic sprays or bandages' fillers for wound infections, and many different types of bacterial infections	[28]
Guar gum	PVA	Purified water and non-alkaline pH or alkaline pH	Biodegradable wound dressing	[29]
	PVA	Deionized water and distilled water	Drug delivery	[30]
Agarose	PVA	Distilled	Biomaterials	[31]

		water		
Alginate	PLA	Distilled water and chloroform	Tissue engineering	[32]
Dextrin	Chitosan	Acetic acid and TFA ¹²	Antibacterial biomaterials	[33]
Amylose	-	DMSO ¹³	Biomedical products	[34]
Xylan	PVA	NaOH and distilled water	Cardiac tissue engineering	[35]
Ulvan	PCL or PEO	DMF and DCM ¹⁴ or Distilled water	Tissue engineering scaffolds, wound dressings, or drug delivery systems	[36]
	PVA or PEO	Denoised water, acetic acid	Drug delivery systems	[37]
Carrageenan	PCL	DCM	Tissue engineering	[38]
	PHB ¹⁵ and PHBV ¹⁶	HFIP ¹⁷ and CHCl ₃	Bone tissue engineering	[39]
Fucoidan	Chitosan and PVA	Deionized water and	Vascular Tissue Engineering	[40]

¹² Trifluoroacetic acid

¹³ Dimethyl sulfoxide

¹⁴ Dichloromethane

¹⁵ Polyhydroxy butyrate

¹⁶ Polyhydroxy butyrate valerate

¹⁷ 1,1,1,3,3,3- hexafluoro-2-propanol

		acetic acid		
Cellulose and its derivatives	PVA	Deionized water	Bone tissue engineering	[41]

Table 5: The researches of natural polysaccharide from animal origin and their potential applications.

Natural	Additive	Solvent	Potential	Reference
---------	----------	---------	-----------	-----------

polysaccharide from animal origin	polymer		applications	
Chitin	-	1-ethyl-3-methylimidazolium [C ₂ C ₁ Im] ⁺ and 1,3-diethylimidazolium [C ₂ C ₂ Im] ⁺	Wound care	[48]
	-	HFIP	Wound healing and regeneration of oral mucosa and skin	[49]
		HFIP	Wound dressing	[14]
Chitosan	Gelatin	TFA and DCM	Skin tissue engineering	[50]
	PVA	Acetic acid and distilled water	Tissue engineering	[51]
	-	TFA and DCM	Bone tissue engineering	[52]

Table 6: The researches of natural polysaccharide from microbe origin and their potential applications.

Natural	Additive	Solvent	Potential	Reference
----------------	-----------------	----------------	------------------	------------------

polysaccharide from microbe origin	polymer		applications	
Schizophyllan	PVA	DMSO, formic acid, and deionized water	Wound healing	[59]
Pullulan	-	Redistilled water	Drug delivery, Bandages	[60]
	-	Distilled water	Water-resistant biomaterials	[61]
	-	Deionized water	Adsorption, separation, biomedical and tissue engineering	[62]
	Gelatin	Distilled water	Tissue engineering scaffold	[63]
	WPI ¹⁸	Distilled water	Bioactive compounds encapsulation matrices	[64]
	API ¹⁹	Formic acid and Tween 80	Drug delivery	[65]
	PVA	Distilled water	Anti-ultraviolet packaging	[66]
Alginates	Chitosan and PEO	Deionized water	Tissue engineering scaffolds	[67]
	PEO	Deionized water	Tissue engineering	[68]
	PEO	Distilled water	Wound healing,	[69]

¹⁸ Whey protein isolate

¹⁹ Amaranth protein isolate

			regenerative medicine and drug delivery systems	
	PEO or PEG ²⁰	Deionized water	Regenerative medicine and drug delivery applications	[70]
Xanthan gum	-	Formic acid	Drug delivery	[15], [71]
	Chitosan	Formic acid	Drug delivery	[54]
Dextran	PU ²¹	THF and DMF	Wound dressing	[72]
	PU	DMSO and THF	Post-menopausal wound dressing	[73]
	PVP ²²	Distilled water	Drug delivery	[74]
	PVA	Distilled water	Drug delivery	[75]
Gellan	PVA	Deionized water	Skin Tissue Regeneration, drug delivery and regenerative medicine applications	[76], [77]
	PCL	Chloroform, methanol and NaOH	Nucleus Pulposus Regeneration at intervertebral disc	[78]
Curdlan	PVA	Distilled water and formic acid	Wound healing	[79]
	PEO	Deionized water	Wound dressing and drug delivery	[80]

²⁰ Polyethylene glycol

²¹ Polyurethane

²² Polyvinylpyrrolidone

