Table S1. Band assignment of cellulose and of correlated compounds (water, lignin, pectin, hemicellulose, wax). *softwood only; **hardwood only; ν=stretching; δ_{ip}=in plane bending; δ_{op}=out of plane bending

Cellulose - $\tilde{\nu}$ (cm^{-1})	Lignin - $\tilde{\nu}$ (cm^{-1})	Wax - $\tilde{\nu}$ (cm^{-1})	Hemicellulose - $\tilde{\nu}$ (cm^{-1})	Pectin – $\tilde{\nu}$ (cm^{-1})	Assignations
				2940	ν CH[74]
	2930				ν CH[76]
2900					ν CH[57,76,79]
		2917, 2849			ν(CH_2)[8,55]
				1760-40	ν C=O of alkyl ester[7,74]
	1740				ν C=O [77,78]
			1732		ν C=O[7]
		1732			ν C=O of ester[8,55]
	1717				ν C=O [76]
		1707, 1686			ν (C=O···H)[8,80]
	1640				ν C=O [76–78]
1643-34			1645	1645	δ OH of adsorbed water[50,74–76]
	1606				ν ring and ν C=O[76]
				1600	ν COO^- (pectate)[7,74]
	1594**				ν C=O conjugated to aromatic ring[77]
	1507				ν ring[76,77]
		1470-63			δ CH_2[8,80–82]
1472					δ CH_2[75]; δ O-H[79]
			1474		[7]
	1463				δ CH_2[76,77]
1454					δ_{ip} O-H in alcohol groups [59] ; δ_{op} OH[75]; δ O-H[79]
				1440	ν C-H_3 of methyl ester[7]
		1438			δ CH_2[80]
1427					δ_{ip} O-H in alcohol groups [59]; δ CH_2[57,75,79]
	1425				ν C-H, δ_{ip} C-H and ring[76,77]
				1403	ν, δ $(C–OH)_{COOH}$[74]
		1378			δ CH_3[80]; δ O-H of carboxyl group[80]
	1375				ν C-H and ν OH in phenol[77]
1370			1370		δ C-H[7,57,75,76,79]
1361					δ C-H[75,79]
1336					δ_{ip} O-H in alcohol groups [59,75,76]; δ O-H[79]
				1330	δ C-H[74]; δ OH in pyranose ring[7]
	1317**				δ CH_2 in syringil group[76,77]
1315					δ_{ip} OH in alcohol groups [59]; δ_{ip} CH_2 [75,76]; δ CH_2[57,79]
		1305			ν C-O of alcoholic group[80]
		1292			δ C-H_2[80]
1280					δ CH[57,75]
	1270*				ν guaiacyl ring and ν C=O [76,77]

Cellulose - $\tilde{\nu}$ (cm^{-1})	Lignin - $\tilde{\nu}$ (cm^{-1})	Wax - $\tilde{\nu}$ (cm^{-1})	Hemicellulose - $\tilde{\nu}$ (cm^{-1})	Pectin – $\tilde{\nu}$ (cm^{-1})	Assignations
			1247		ν C-O[84]
	1233**				ν C-C, C-O e C=O[77]
1235					δ O-H[79]; δ_{ip} C-OH[57]
				1230	ν C=O[7]; (δ OH)$_{COOH}$[74]
	1214				ν C=O of guaiacyl ring [76,77]
1202					ν glucose ring[79]; δ_{ip} OH[57,75,76]
	1165				ν C–O–C in pyranose rings, ν C=O[77]
				1164	ν C-O-C at glycosidic linkage [7,74], ν ring[74]
			1164,52		ν C-O-C at glycosidic linkage[7]
1160					ν C-O-C at glycosidic linkage[57,75,76,79]
		1155			ν C-O of alcoholic group[80]
				1144	ν C-O-C at glycosidic linkage[7]
	1140				ν CH in guaiacyl and ν CH in syringyl group[76]
				1119	ν C-C and ν C-O[74]
1105					ν glucose ring[75,76]
1125					ν C-O and ring[79]
				1097	ν C-O[7,74] and ring[7]
		1093			ν ring[80]
	1086*				ν C=O of secondary alcohols[76]
1075					ν C-O and ring[79]; ν C-O-C [59]
			1065		ν C-O and ν C-C[7]
1055					ν C-O and ring[79]; ν C-OH in secondary alcohols[59,75,76]
			1035		ν C-O and ν C-C[7]
				1034	ν C-C and ν C-O[74]
	1030				ν C-O of primary alcohol, ν C-H of guaiacyl group[76]
1030					ν C-O[57,79] ; ν glucose ring[79]; ν C-OH in primary alcohols (primary conformation)[59,75,76]
		1027			ν C-O of alcoholic group[80]
			1027,13		ν C-O and ν C-C[7]
				1014	ν C-O, ν ring and ν C-C[7]
1000					ν C-OH in primary alcohols (secondary conformation)[59,75,79]; ν glucose ring[79]; ν C-O-C (glycosidic)[83]
984					ν C-OH[57,75] ; ν C-O-C at glycosidic linkage[83]
			983		[7]
				970	[7]
				954	δ C-O[7,74]
			939		ν ring[7]
				914	ν ring[7]
897					ν C-O-C (glycosidic)[57]; ν glucose ring[75,76]; δ C-H[76,79]
		890			δ CH_2[80]
			890,70		δ C-H [7]
	912-866				δ_{op} CH_2[76]

Cellulose - $\tilde{\nu}$ (cm^{-1})	Lignin - $\tilde{\nu}$ (cm^{-1})	Wax - $\tilde{\nu}$ (cm^{-1})	Hemicellulose - $\tilde{\nu}$ (cm^{-1})	Pectin – $\tilde{\nu}$ (cm^{-1})	Assignations
				831	ν ring [7]
			807		ν ring [7]
		730-720			δ CH_2[8,80,82]
700, 662					δ_{op} OH in COH alcoholic groups[59,75]
		668			δ_{op} ring[80]

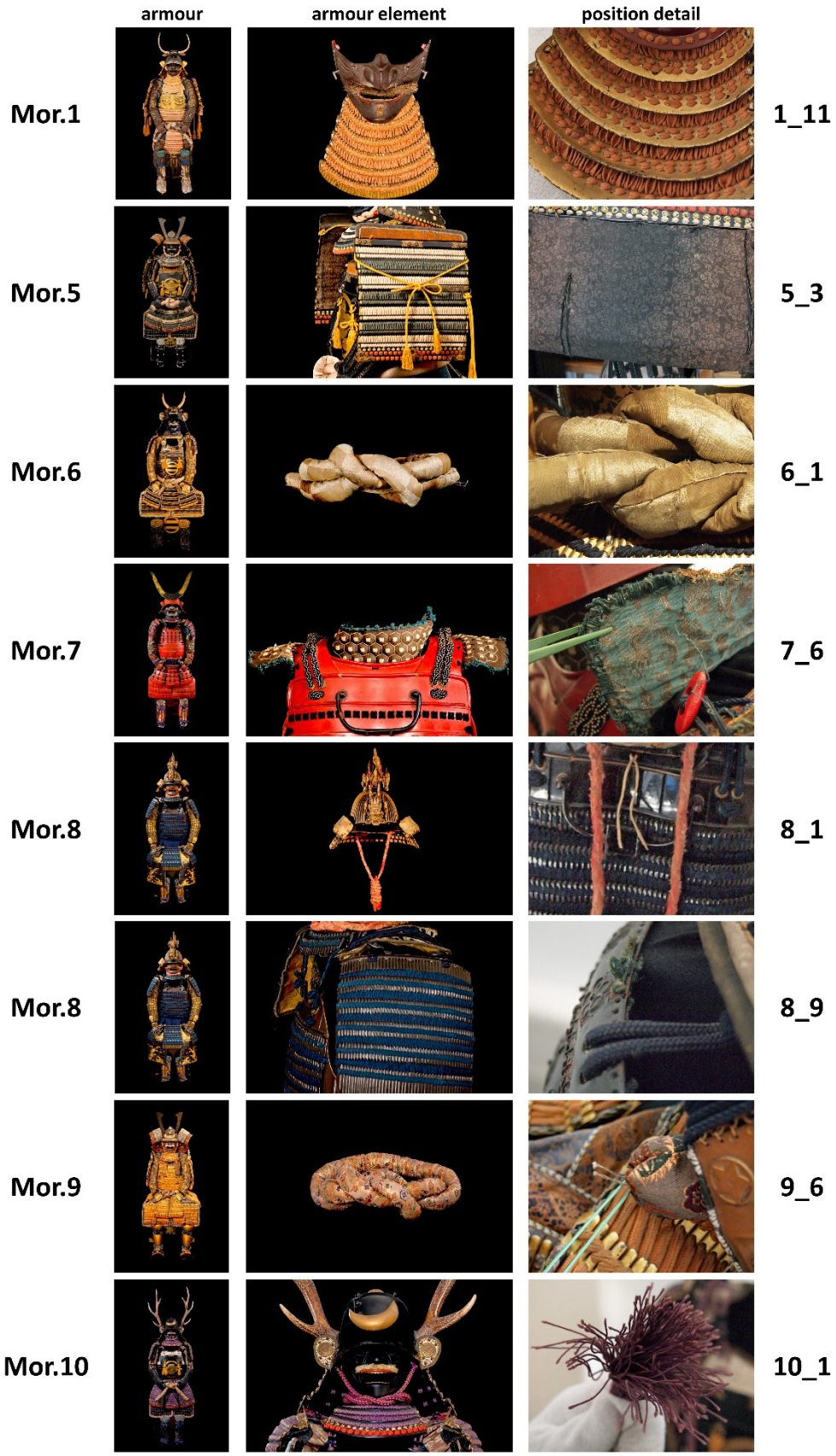

Figure S1. The pictures of the whole historical objects.

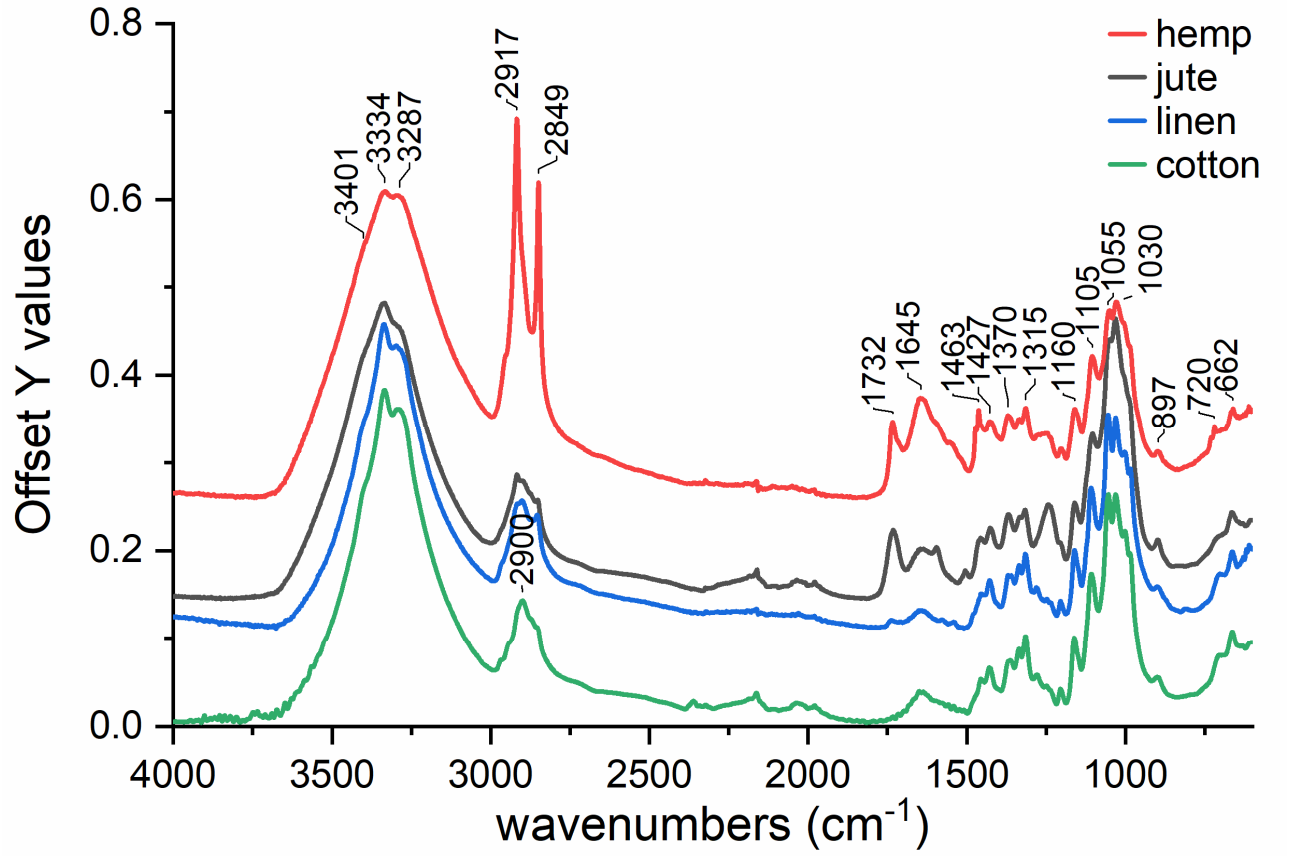

Figure S2. Whole ATR-FTIR spectra of reference materials of jute, hemp, flax (linen), and cotton.

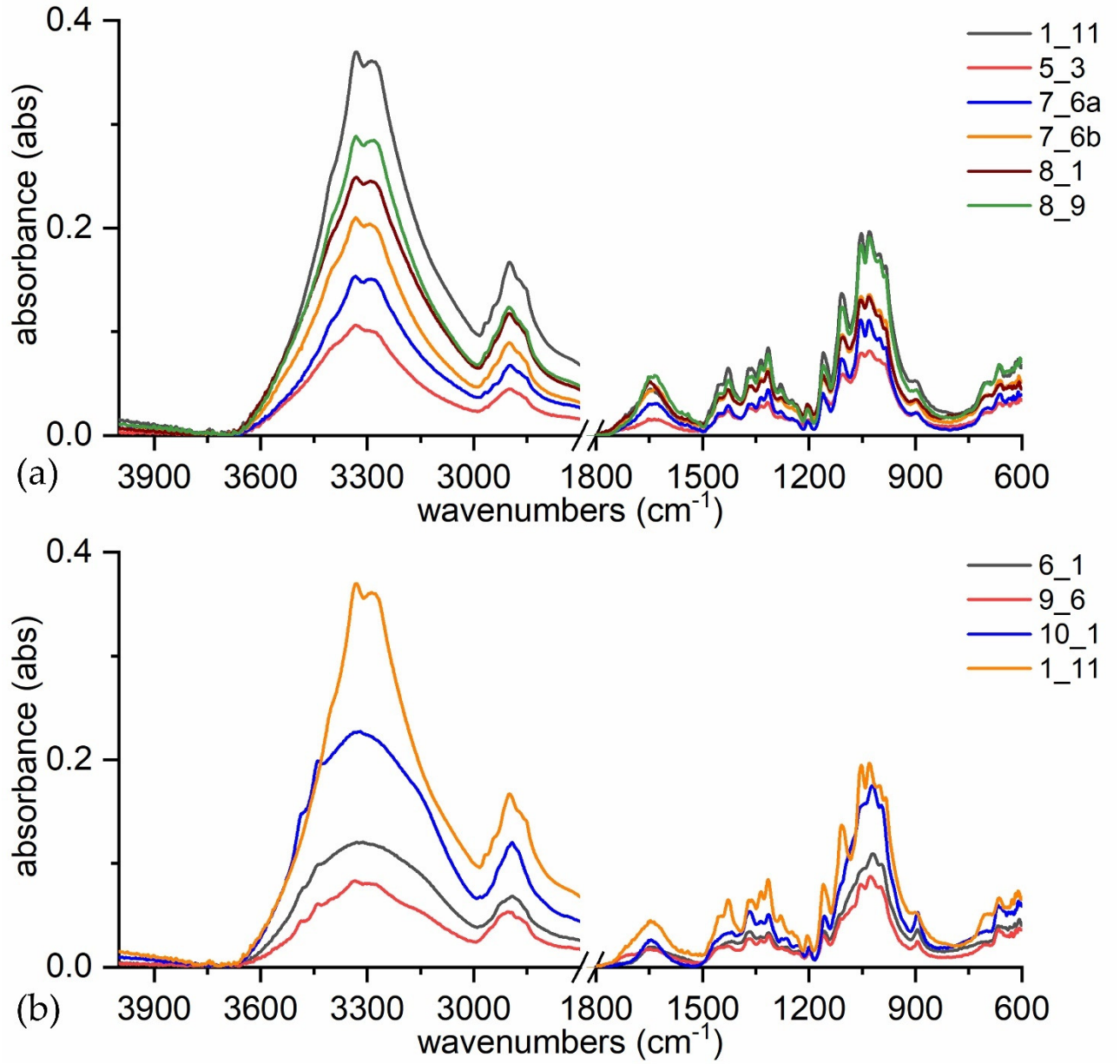

Figure S3. ATR-FTIR spectra of historical samples.