

SUPPLEMENTARY MATERIAL

Identification of cellulose textile fibers

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Table S.1: Fabrics and their composition based on the label and microscopic analysis.

Index	Description of fabric based on label	Color	Microscopic study of yarns	Sample class
1	100% Cotton	White	Cotton	Cotton
2	100% Cotton	White-yellow	Cotton	Cotton
3	100% Cotton	Pink	Cotton	Cotton
4	100% Cotton	White (main color)	Cotton	Cotton
5	100% Cotton	White-beige	Cotton	Cotton
6	100% Cotton	Beige (main color)	Cotton	Cotton
7	100% Cotton	Pink (main color)	Cotton	Cotton
8	100% Cotton	Beige-yellow	Cotton	Cotton
9	100% Cotton	Pink	Cotton	Cotton
10	100% Cotton	Red-white	Cotton	Cotton
11	100% Cotton	Pink-blue	Cotton	Cotton
12	100% Cotton	Brown	Cotton	Cotton
13	100% Cotton	Brown-white	Cotton	Cotton
14	100% Cotton	Brown-yellow	Cotton	Cotton
15	100% Cotton	Orange	Cotton	Cotton
16	100% Cotton	Red (main color)	Cotton	Cotton
17	100% Cotton	White-purple	Cotton	Cotton
18	100% Cotton	Turquoise-white	Cotton	Cotton
19	100% Cotton	Grey-white	Cotton	Cotton
20	100% Cotton	Blue-white	Cotton	Cotton
21	100% Cotton	Dark blue	Cotton	Cotton
22	100% Cotton	Dark blue	Cotton	Cotton
23	100% Viscose	White	Viscose	Viscose
24	100% Viscose	Light green	Viscose	Viscose
25	100% Viscose	Beige-dark red	Viscose	Viscose
26	100% Viscose	Violet	Viscose	Viscose
27	100% Viscose	Violet	Viscose	Viscose
28	100% Viscose	Light-dark violet	Viscose	Viscose
29	100% Viscose	Violet-white	Viscose	Viscose
30	100% Viscose	Dark green	Viscose	Viscose
31	100% Viscose	Black-white	Viscose	Viscose
32	100% Viscose	Turquoise	Viscose	Viscose
33	100% Viscose	Brown	Viscose	Viscose
34	100% Viscose	Brown-black	Viscose	Viscose
35	100% Viscose	Dark blue	Viscose	Viscose
36	100% Viscose	Black-white	Viscose	Viscose
37	100% Viscose	Black	Viscose	Viscose
38	Viscose-cotton blend	White-yellow	Viscose	Viscose
39	100% Lyocell	Green	Viscose	Viscose
40	100% Lyocell	Light green	Viscose	Viscose
41	100% Lyocell	Deep black	Viscose	Viscose
42	100% Lyocell	Yellow	Viscose	Viscose
43	100% Viscose	Beige	Synthetic, viscose	Generic outlier
44	100% Viscose	Brown-beige-black	Viscose	Generic outlier
45	100% Lyocell	Brown	Lyocell	Lyocell
46	100% Lyocell	Black	Lyocell	Lyocell
47	100% Lyocell	Light yellow	Lyocell	Lyocell

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48	100% Lyocell	Beige	Lyocell	Lyocell
49	100% Lyocell	Beige-light blue	Lyocell	Lyocell
50	100% Lyocell	Grey-beige	Lyocell	Lyocell
51	100% Lyocell	Pink	Lyocell	Lyocell
52	100% Lyocell	Dark blue-orange	Lyocell	Lyocell
53	100% Lyocell	Light brown	Lyocell	Lyocell
54	100% Lyocell	Dark green	Lyocell	Lyocell
55	100% Lyocell	Dark brown	Lyocell	Lyocell
56	100% Lyocell	Khaki	Lyocell	Generic outlier
57	100% Modal	Yellow-orange-magenta	Modal	Modal
58	100% Modal	Yellow	Modal	Modal
59	100% Modal	Green-grey	Synthetic or thick modal	Generic outlier
60	95% Modal, 5% Elastane	Red	Cotton, modal, elastane	Blend
61	95% Modal, 5% Elastane	Yellow	Cotton, modal, elastane	Blend
62	95% Modal, 5% Elastane	Blue	Cotton, modal, elastane	Blend
63	50% Cotton, 50% Modal	White	Cotton, modal	Blend
64	50% Cotton, 50% Modal	Red	Cotton, modal	Blend
65	65% Modal, 35% Cotton	Yellow	Modal, cotton	Blend
66	65% Modal, 35% Cotton	Brown	Modal, cotton	Blend
67	80% Cotton, 20% Lyocell	Dark grey	Cotton, lyocell	Blend
68	60% Cotton, 40% Lyocell	White	Cotton, lyocell	Blend
69	50% Cotton, 50% Lyocell	Beige-white	Cotton, lyocell	Blend
70	50% Cotton, 50% Lyocell	Blue-white	Cotton, lyocell	Blend
71	67% Lyocell, 33% Cotton	Brown-purple	Lyocell, cotton	Blend
72	67% Lyocell, 33% Cotton	Brown-beige	Lyocell, cotton	Blend
73	67% Lyocell, 33% Cotton	Brown	Lyocell, cotton	Blend
74	75% Lyocell, 25% Cotton	Red-brown	Lyocell, cotton	Blend
75	85% Lyocell, 15% Cotton	Brown-beige	Lyocell, cotton	Blend
76	90% Lyocell, 10% Cotton	Grey	Lyocell, cotton	Blend
77	96% Lyocell, 4% Cotton	Dark grey	Lyocell, cotton	Blend
78	65% Cotton, 35% Viscose	Yellowish	Cotton, viscose	Blend
79	60% Viscose, 40% Cotton	Beige	Viscose, cotton	Blend
80	95% Modal, 5% Elastane	White	Cotton, modal, elastane	Blend
81	60% Cotton, 40% Lyocell	Pale beige	Cotton, lyocell	Blend

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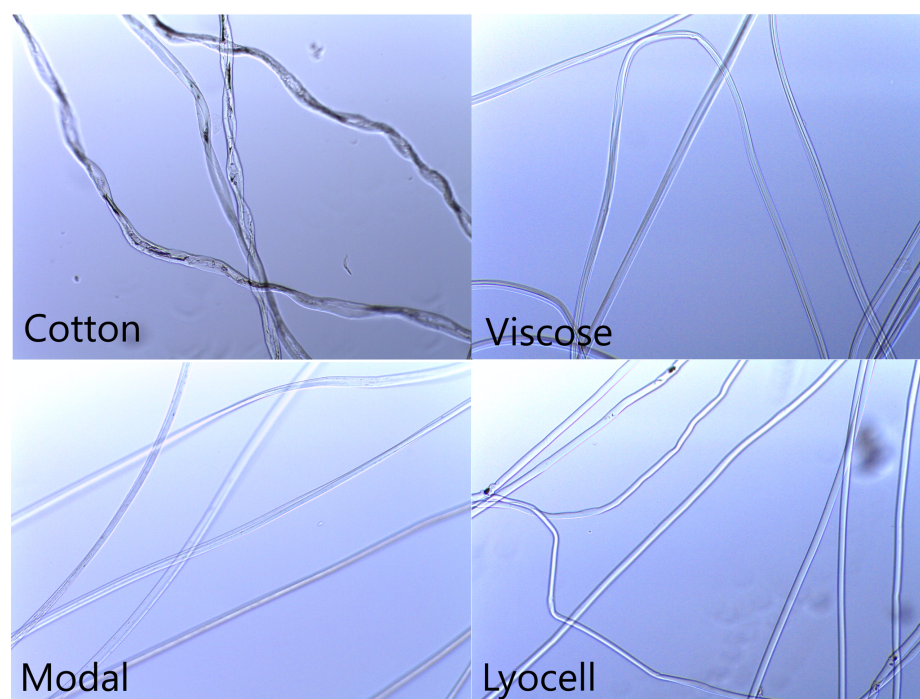


Fig. S.1: Examples of the microscopic images of the different pure fibers in the training set.

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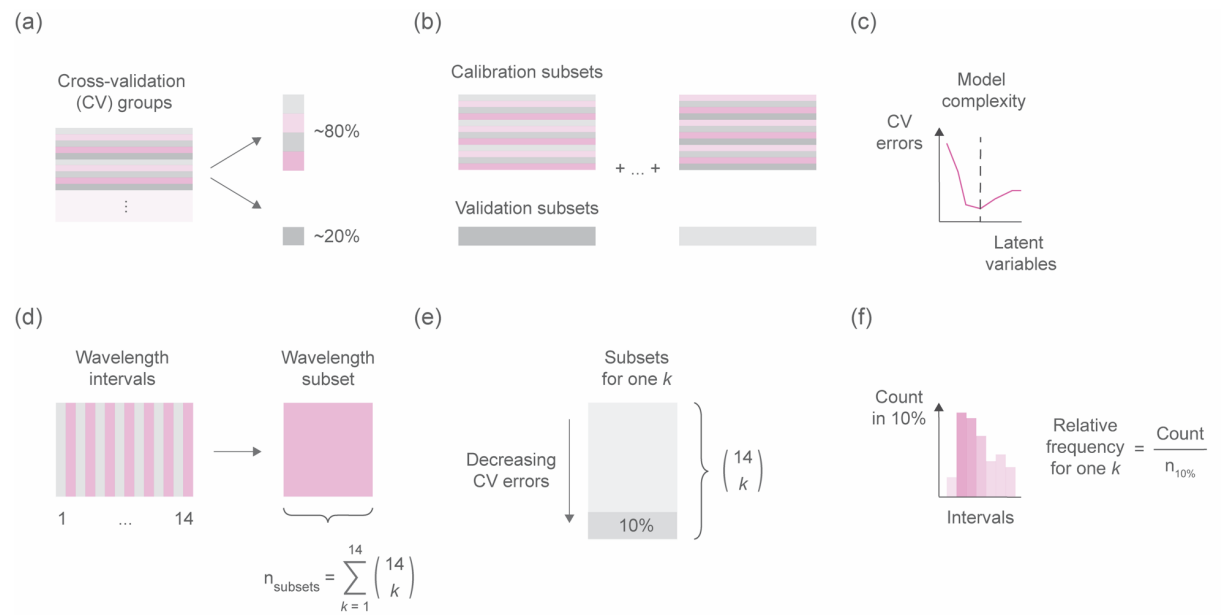


Fig. S.2: The principles of cross-validation and variable selection. Assigning the cross-validation objects in (a), the calibration and validation sets in (b), and choosing the number of latent variables based on cross-validation errors in (c). Assigning the wavelength intervals in (d), choosing 10% of classifiers with the lowest cross-validation errors in (e), and determining relative interval frequency in the chosen 10% in (f).

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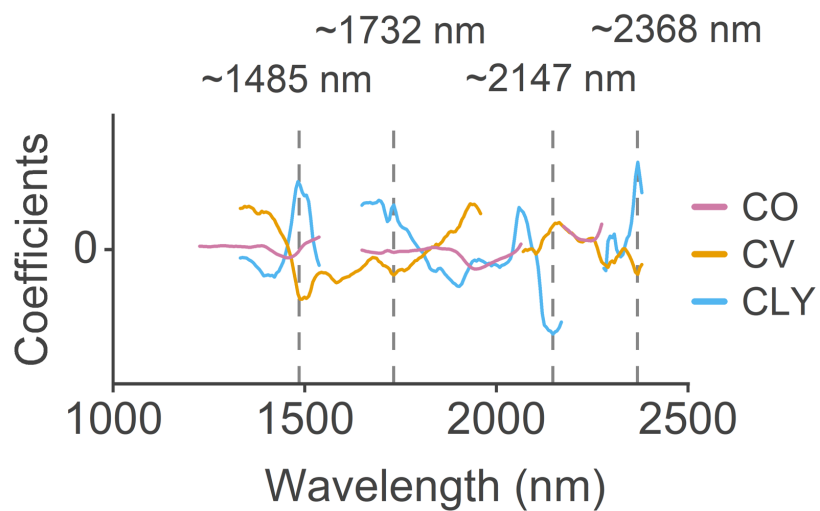


Fig. S.3: Regression vectors of the cotton (CO), viscose (CV) and lyocell (CLY) classifiers.

The vertical dashed lines show four important wavelengths for separating the viscose and lyocell classes.