Supporting Information

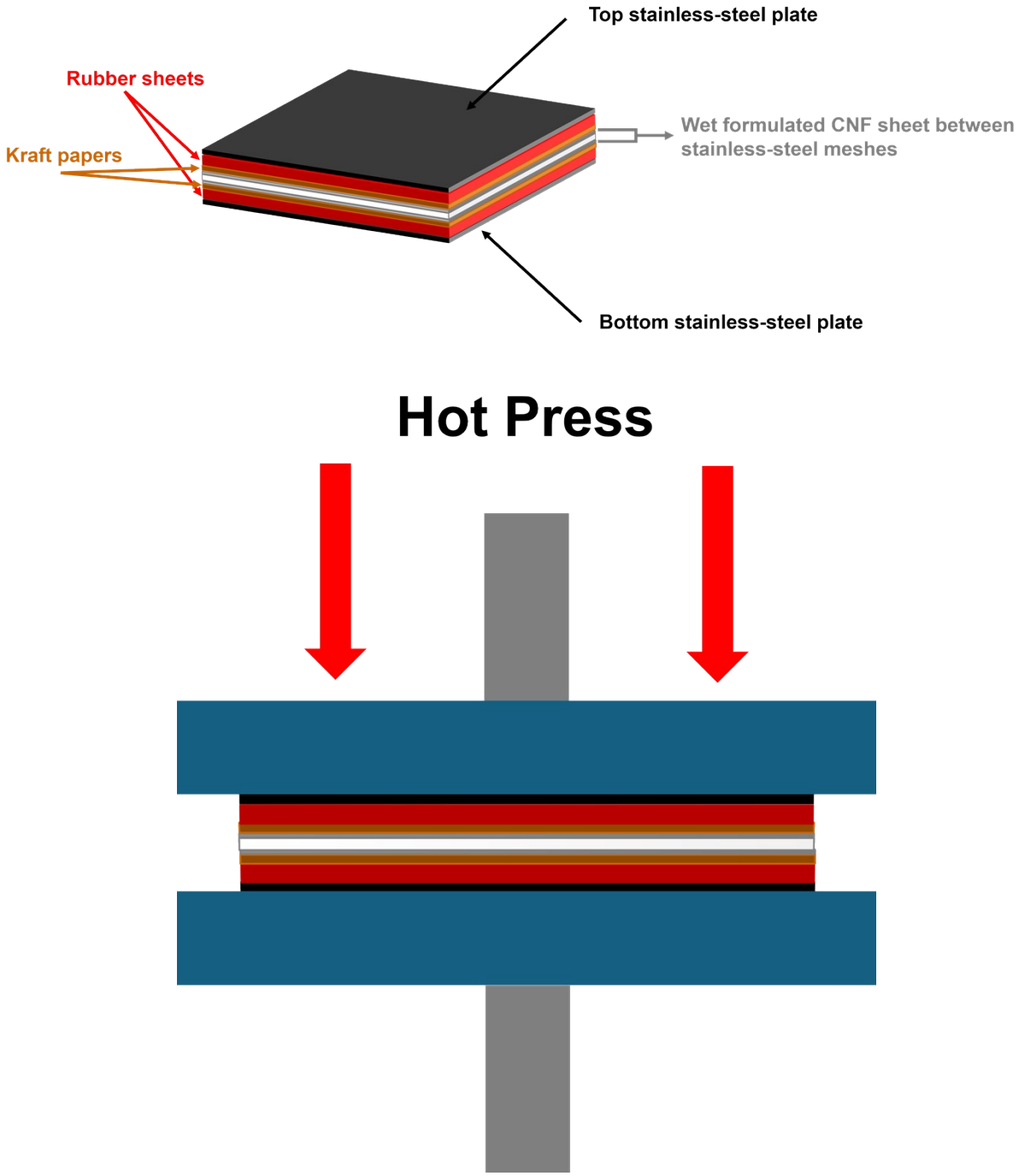

Figure. S1

Schematic plot of formulated CNF dry sheets preparation.

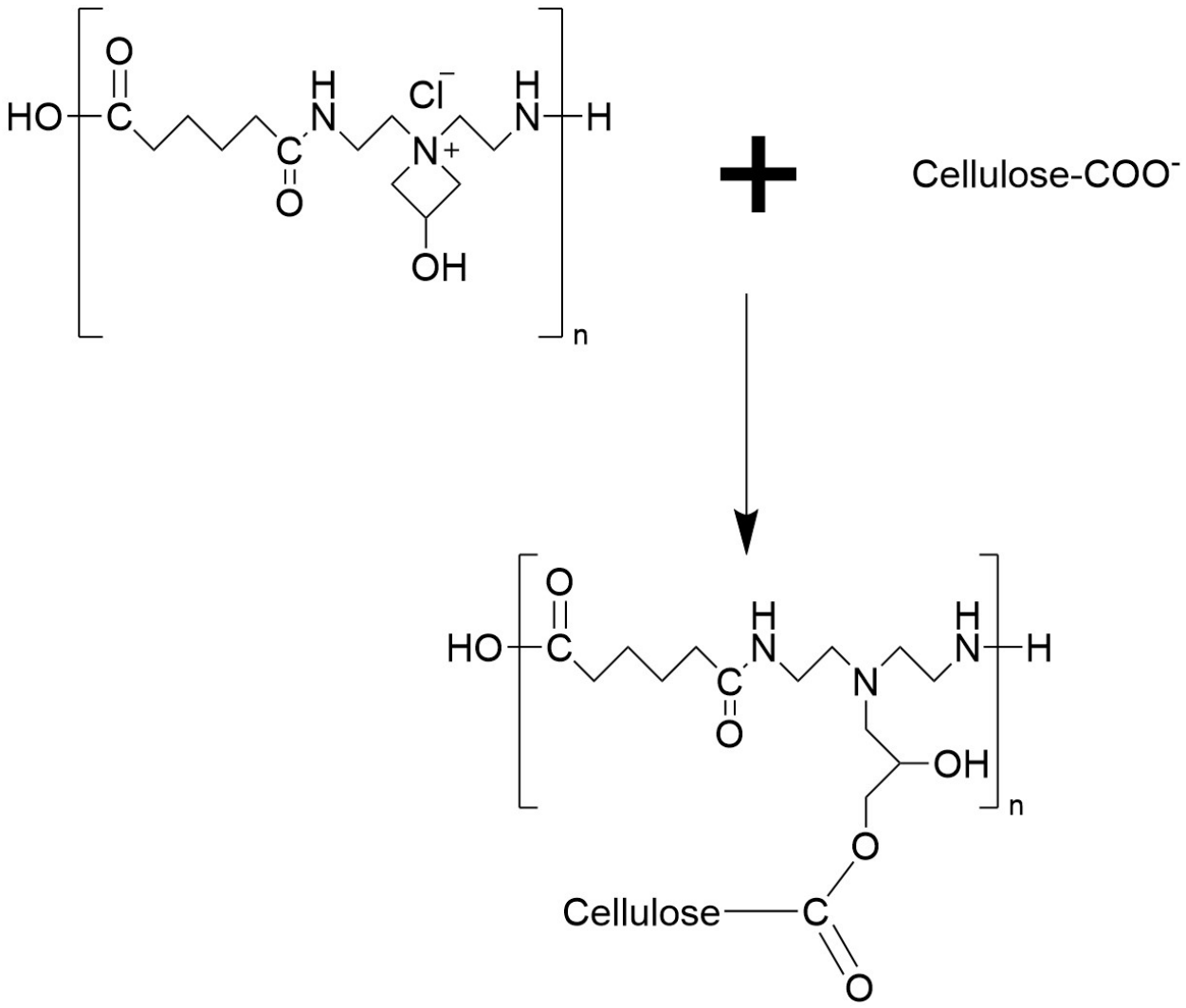

Figure. S2

Mechanism of crosslinking of CNF/CMC with PAE.

Figure. S3

Photos of crosslinked CNF coated MP trays. From left to right are BTCA crosslinked CNF, CA crosslinked CNF, and PAE crosslinked CNF.

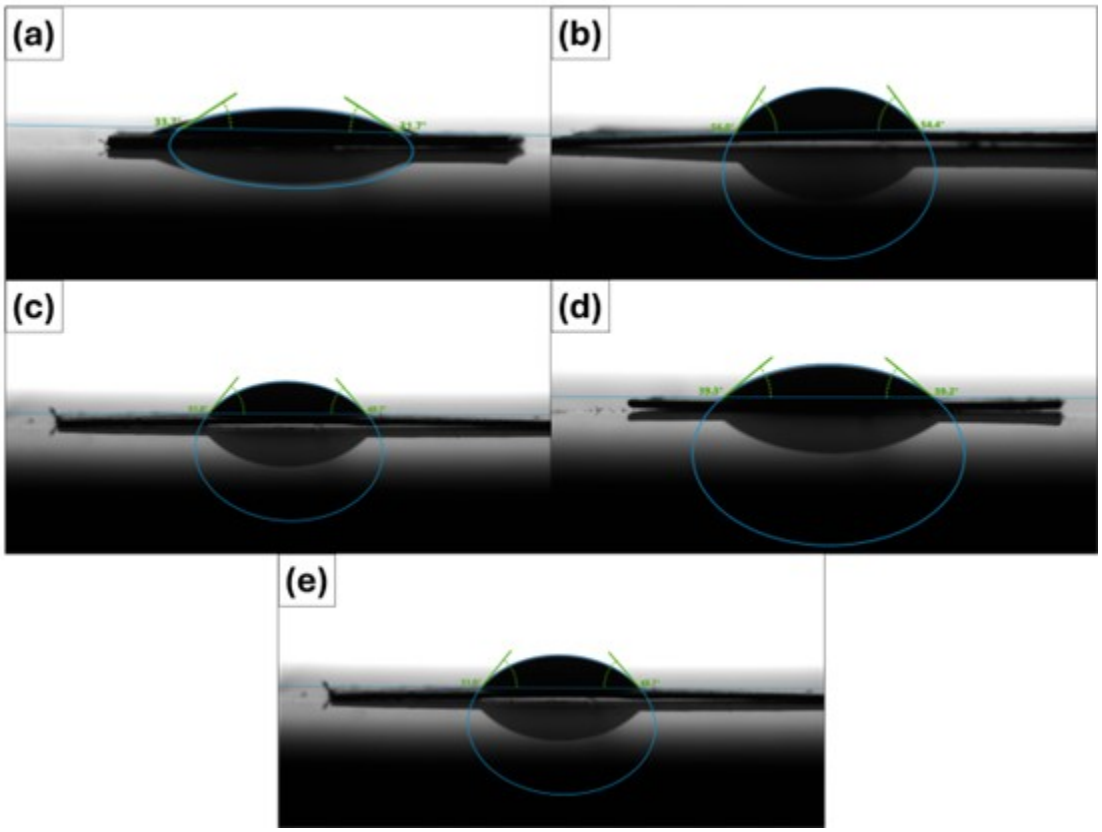

Figure. S4

Contact angles of the dry sheets of (a) CNF/CMC, (b) PAE crosslinked CNF, (c) PAE crosslinked CNF with addition of Cloisite-Na^{+}, (d) PAE crosslinked CNF with addition of PVA, and (e) formulated CNF.

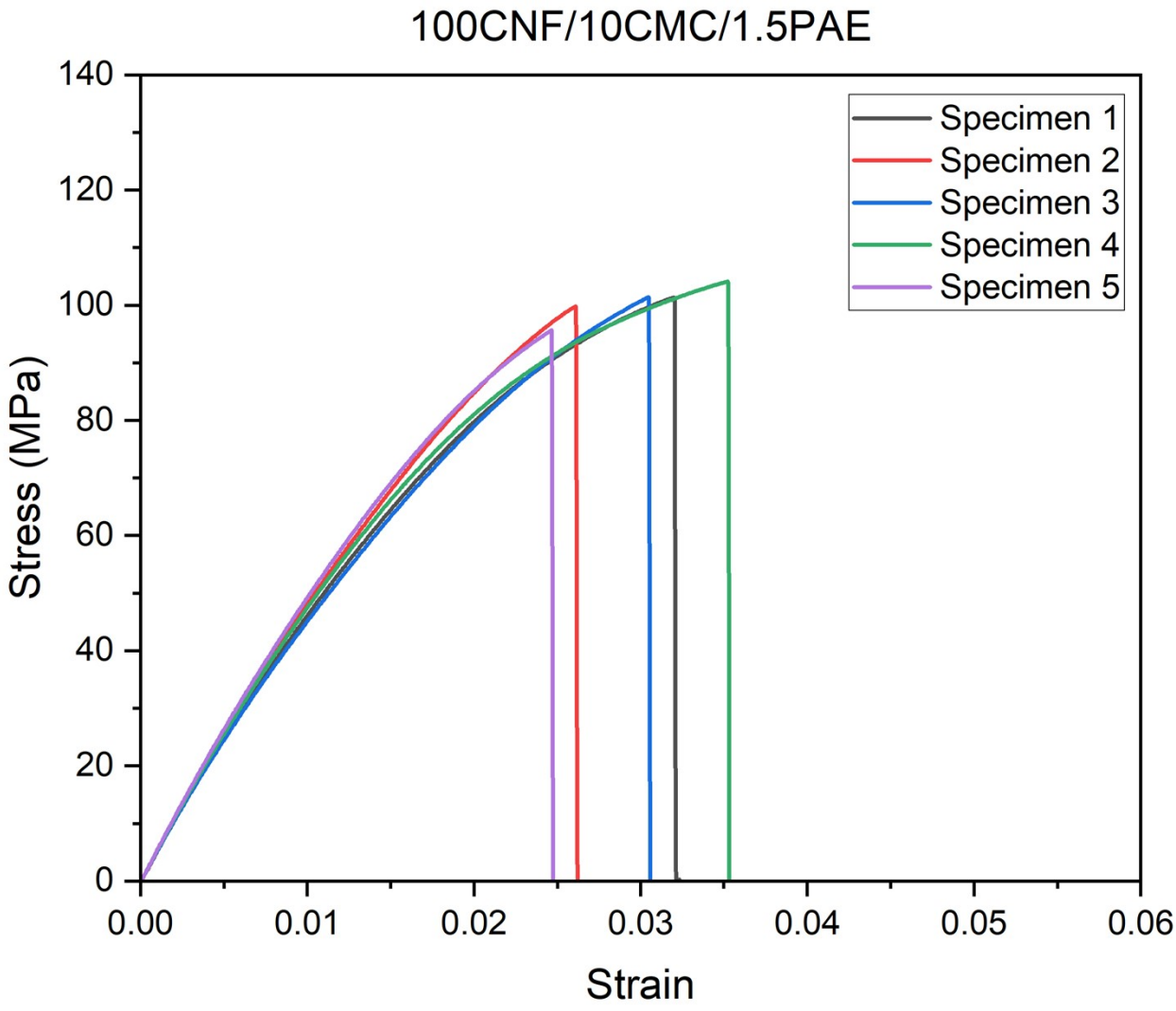

Figure. S5

Stress vs strain curves of the 100CNF/10CMC/1.5PAE dry sheets.

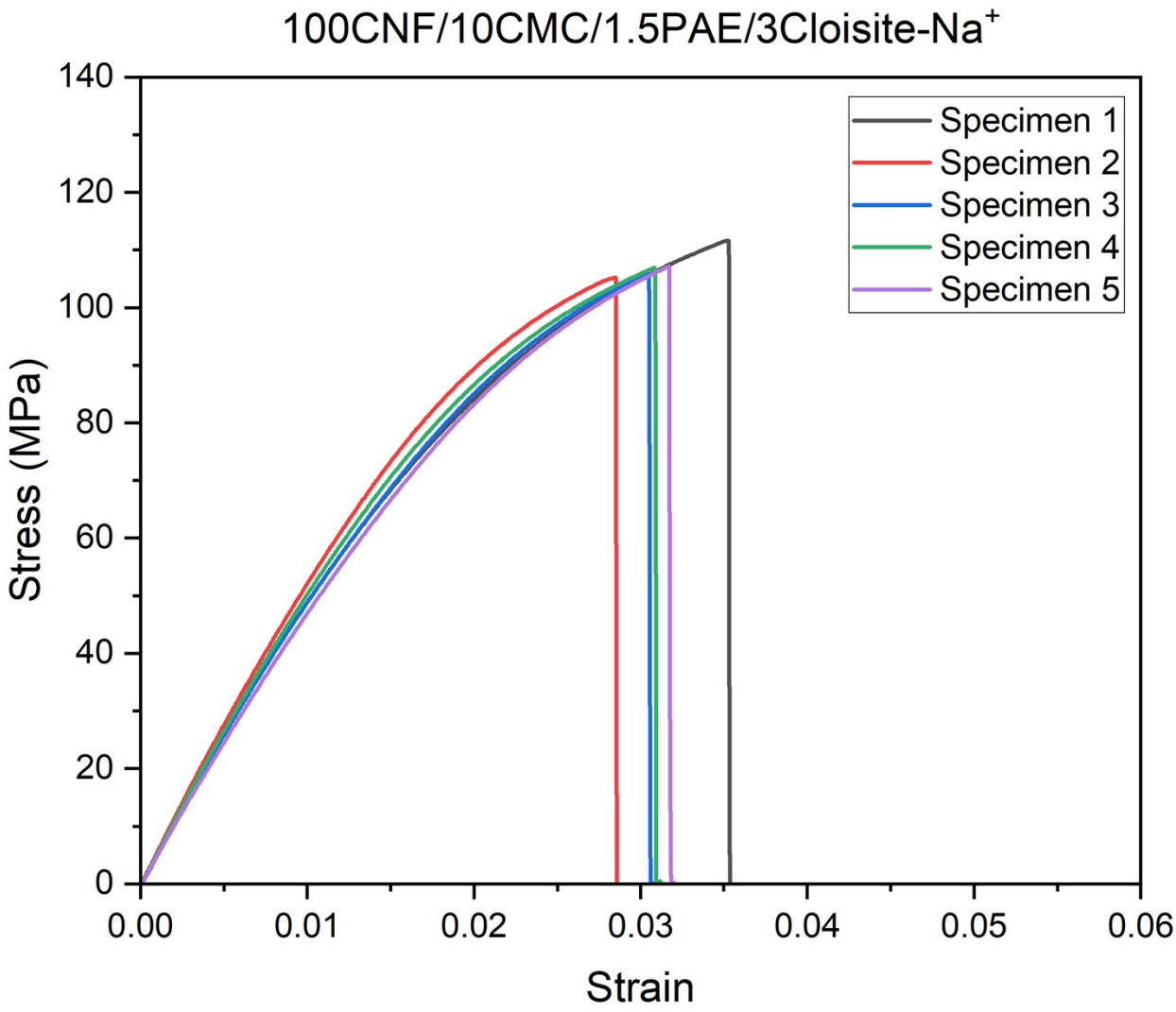

Figure. S6

Stress vs strain curves of the 100CNF/10CMC/1.5PAE/3Cloisite-Na^+ dry sheets.

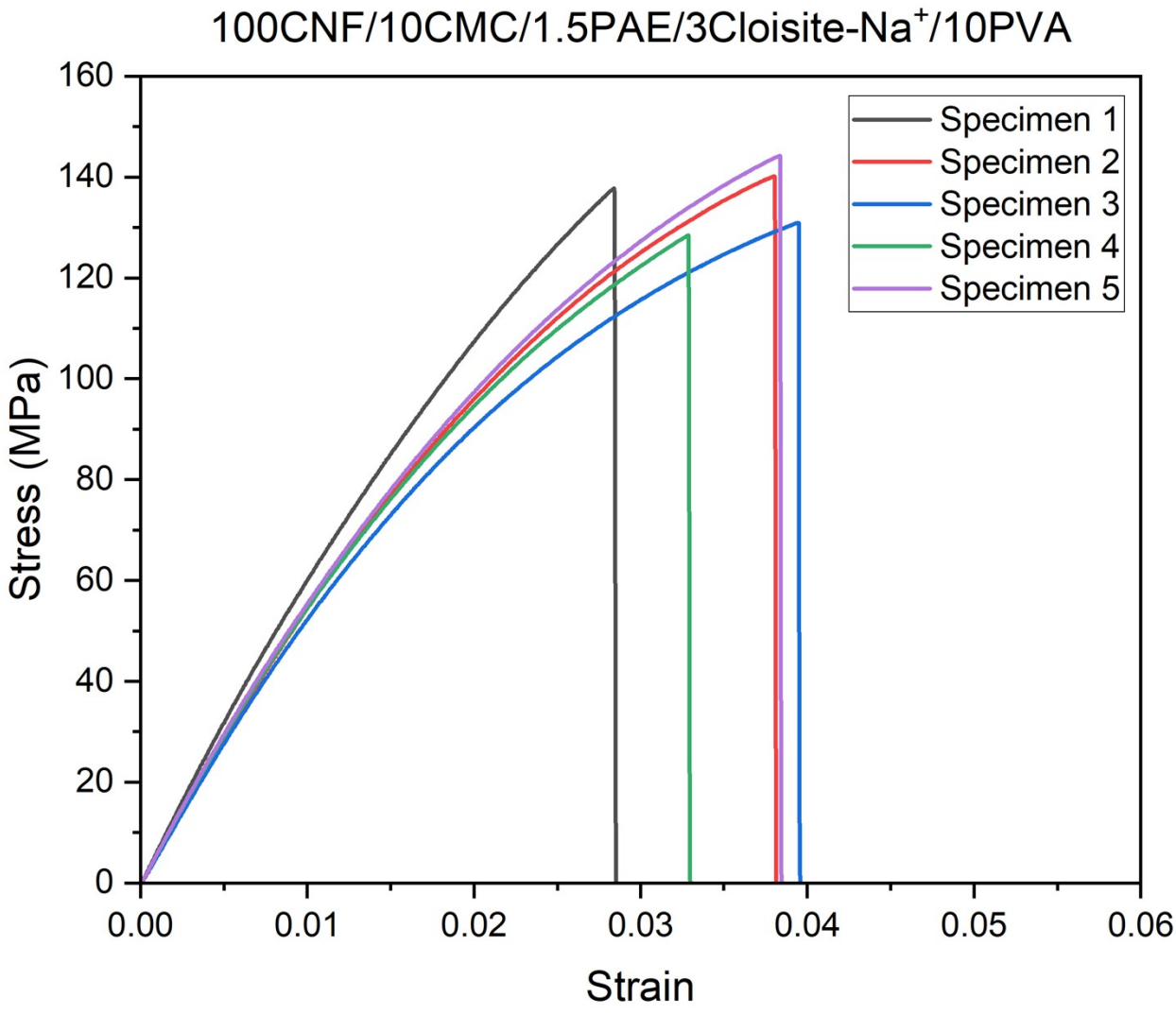

Figure. S7

Stress vs strain curves of the 100CNF/10CMC/1.5PAE/3Cloisite-Na^+/10PVA dry sheets.

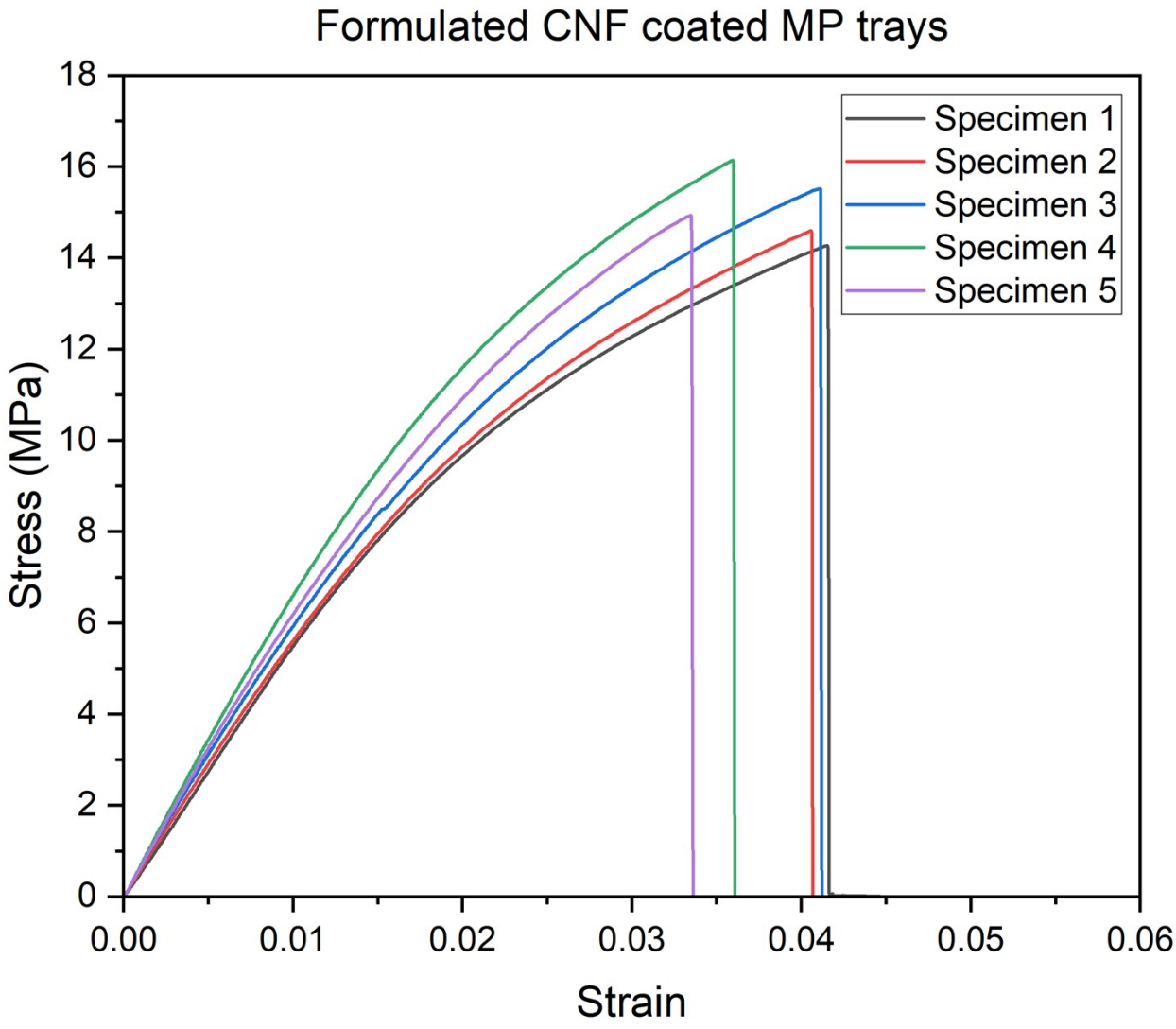

Figure. S8

Stress vs strain curves of the formulated CNF coated MP trays.

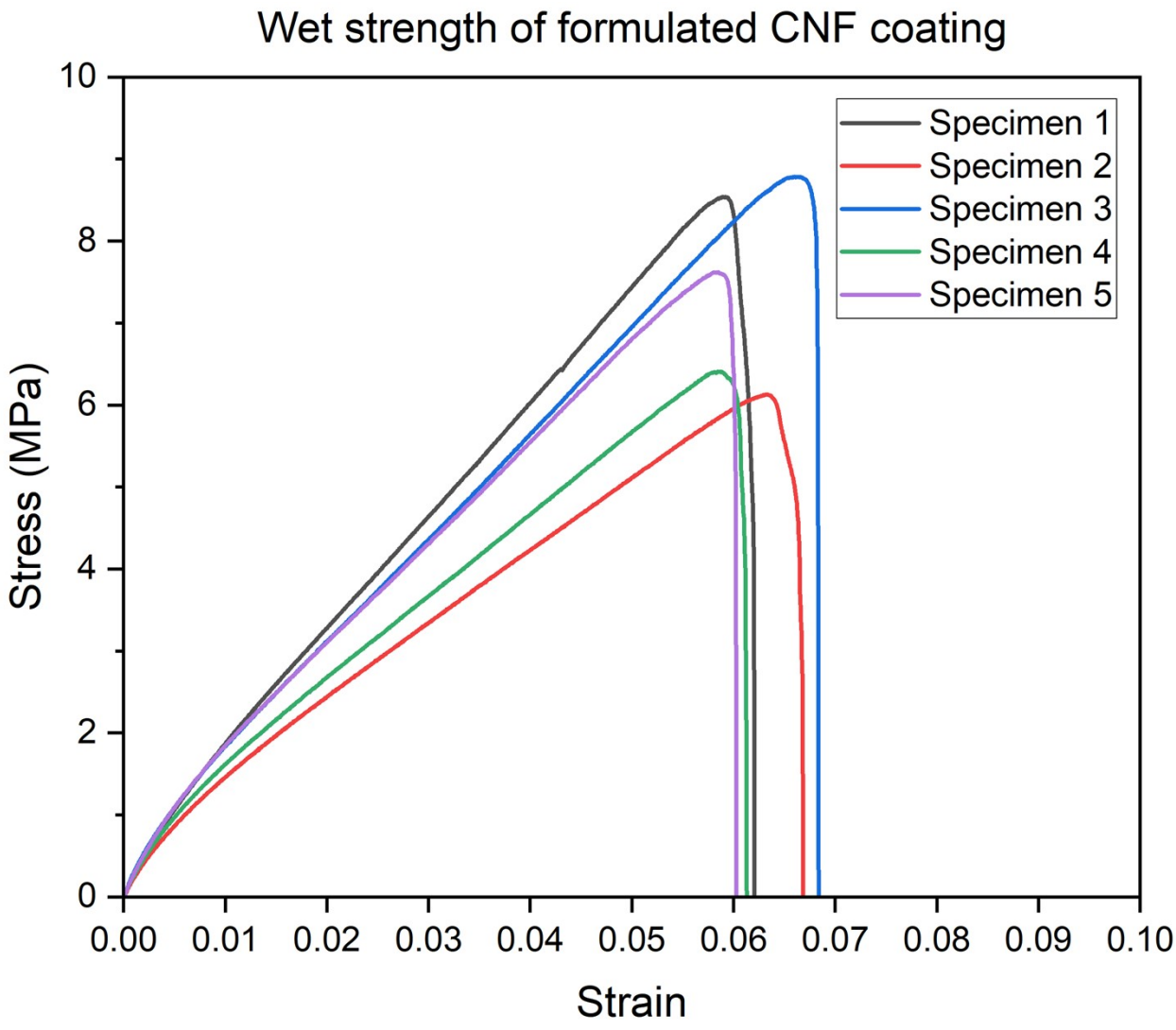

Figure. S9

Stress vs strain curves of the wet formulated CNF coatings (wet strength).

Table S1

Initial contact angles for CNF-based coated MP trays with/without PAE crosslinking, nano-clay, or PVA. Each value was the average of two contact angles on two sides.

Samples (weight ratio)	Initial contact angles
100CNF/10CMC	32.7°
100CNF/10CMC/1.5PAE	55.2°
100CNF/10CMC/1.5PAE/3Cloisite-Na^+	49.9°
100CNF/10CMC/1.5PAE/10PVA	42.0°
100CNF/10CMC/1.5PAE/3Cloisite-Na^+/10PVA	39.3°