

## Supporting Material file for

### Surface plasma modification of cellulose acetate fiber filter for the retention and adsorption of typical components in smoke components

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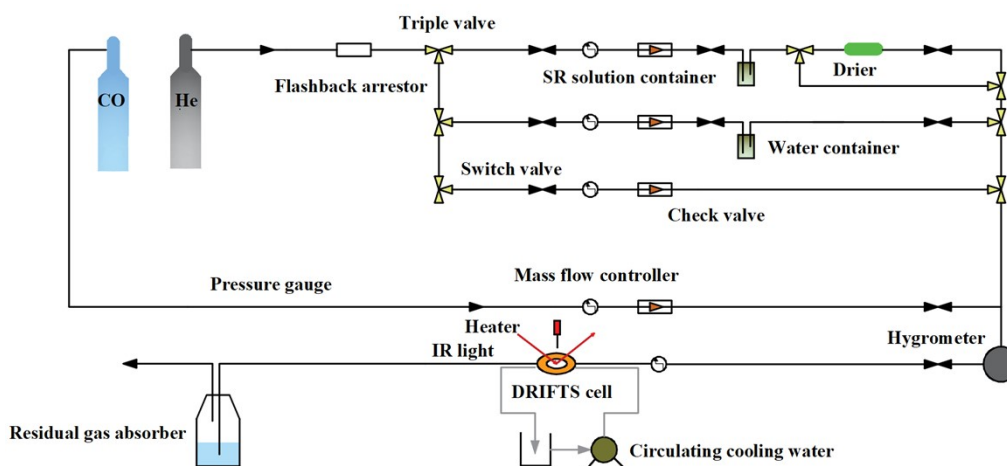


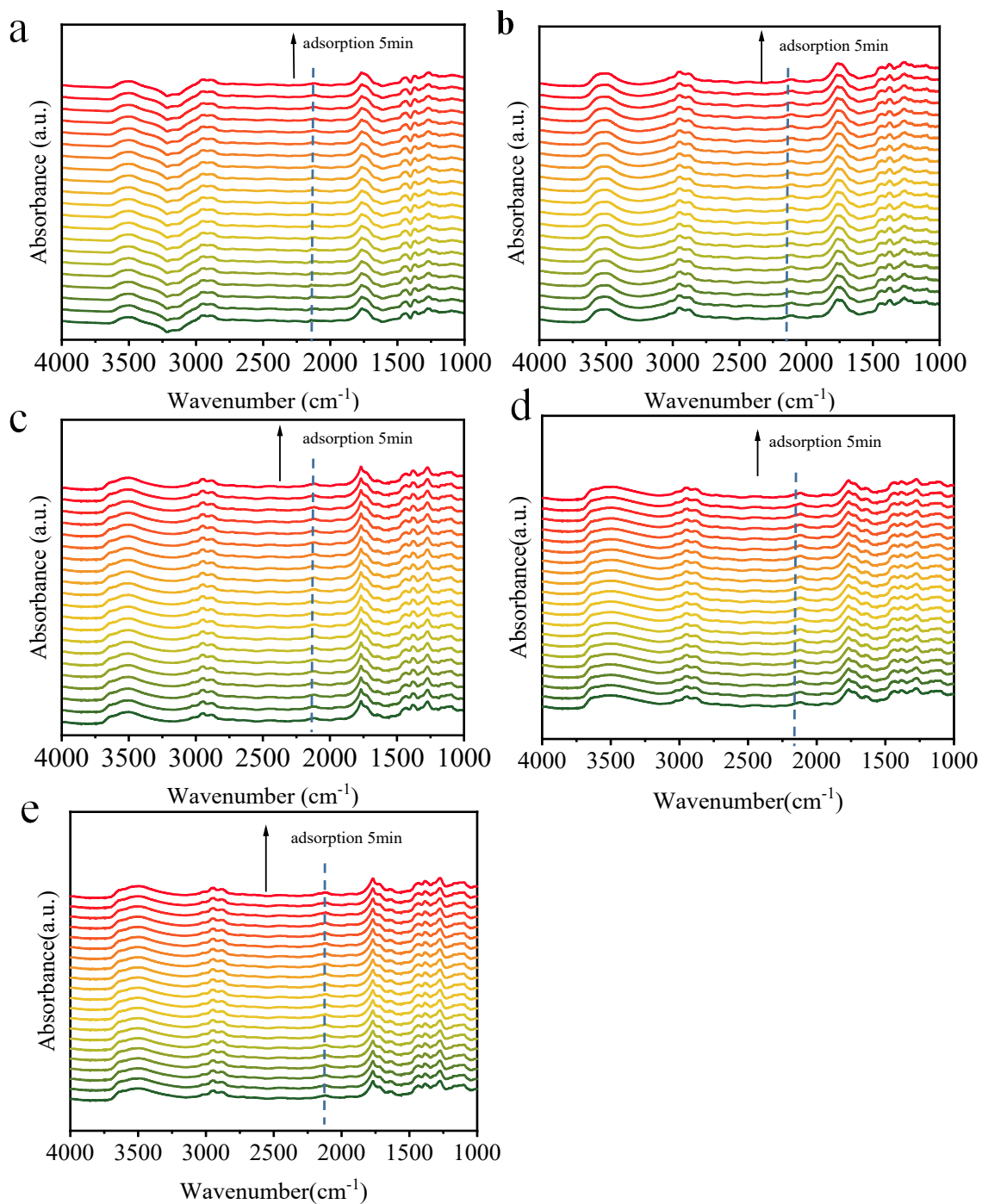
Figure S1. Schematic diagram of experimental device measured by in-situ DRIFTS.

**Table S1** Percentage of atoms in different FR samples (%)

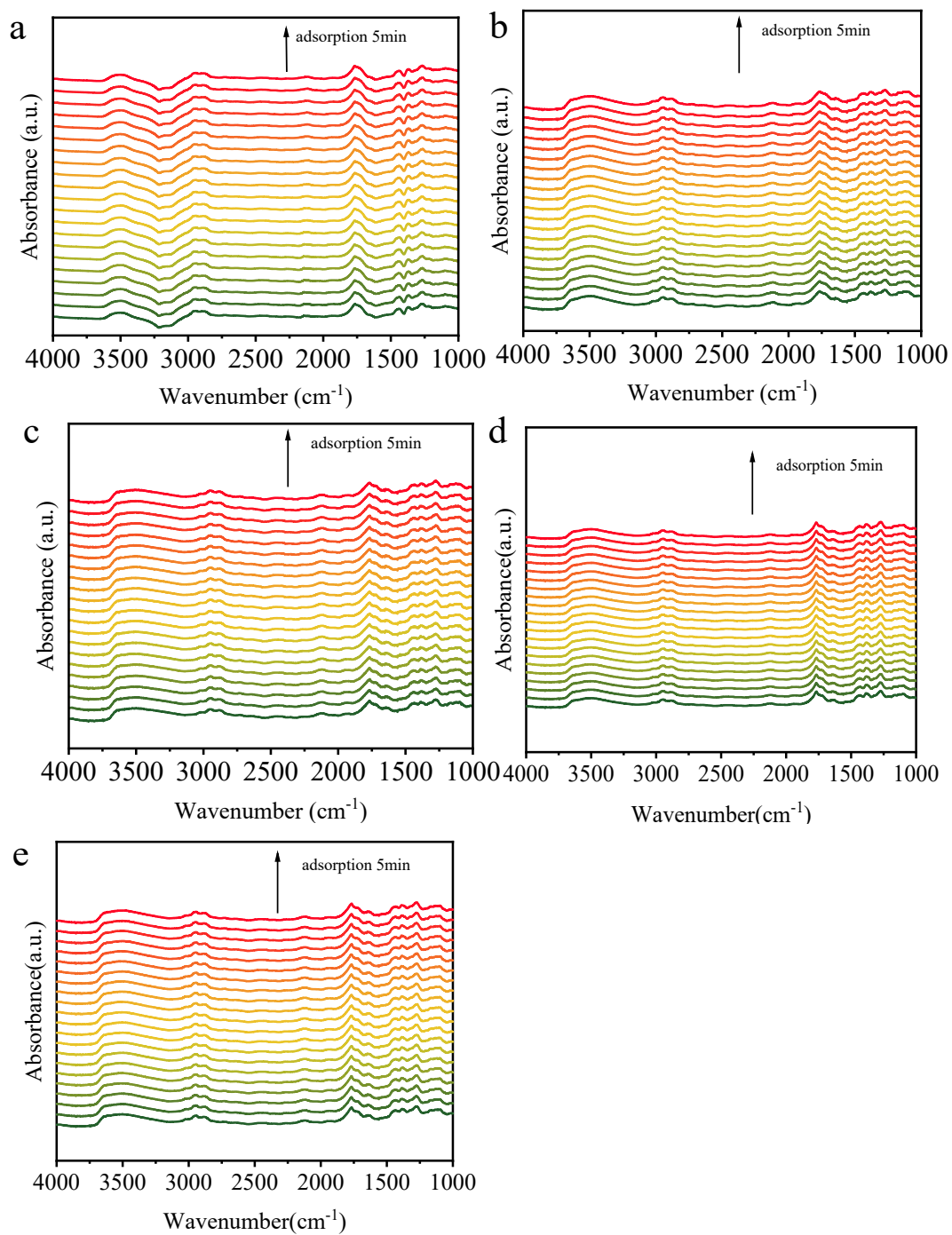
Sample	C	O
FR	62.02	37.98
FR-50	61.46	38.54
FR-100	64.28	35.72
FR-150	61.41	38.59
FR-200	61.66	38.34

**Table S2** Functional groups percentage of FR samples treated at different temperature.

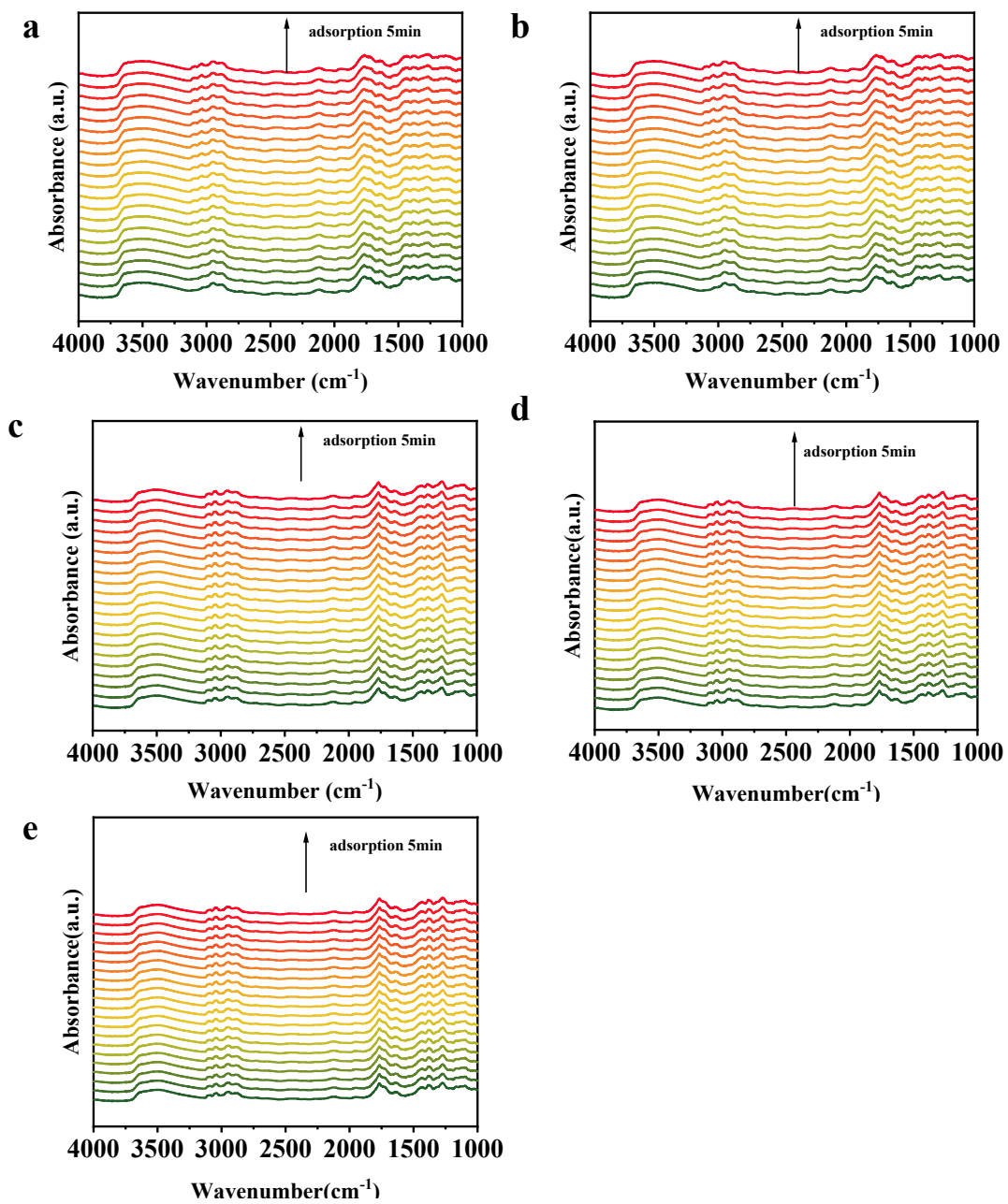
Sample	Percentage content (mol %)			
	C-C	C-O	C=O	CO <sub>3</sub> <sup>2-</sup>
FR	34.96	17.98	31.84	15.22
FR-50	36.33	17.75	30.21	15.68
FR-100	41.16	34.33	19.40	5.09
FR-150	34.66	17.39	32.31	15.65
FR-200	42.85	21.78	27.93	7.44



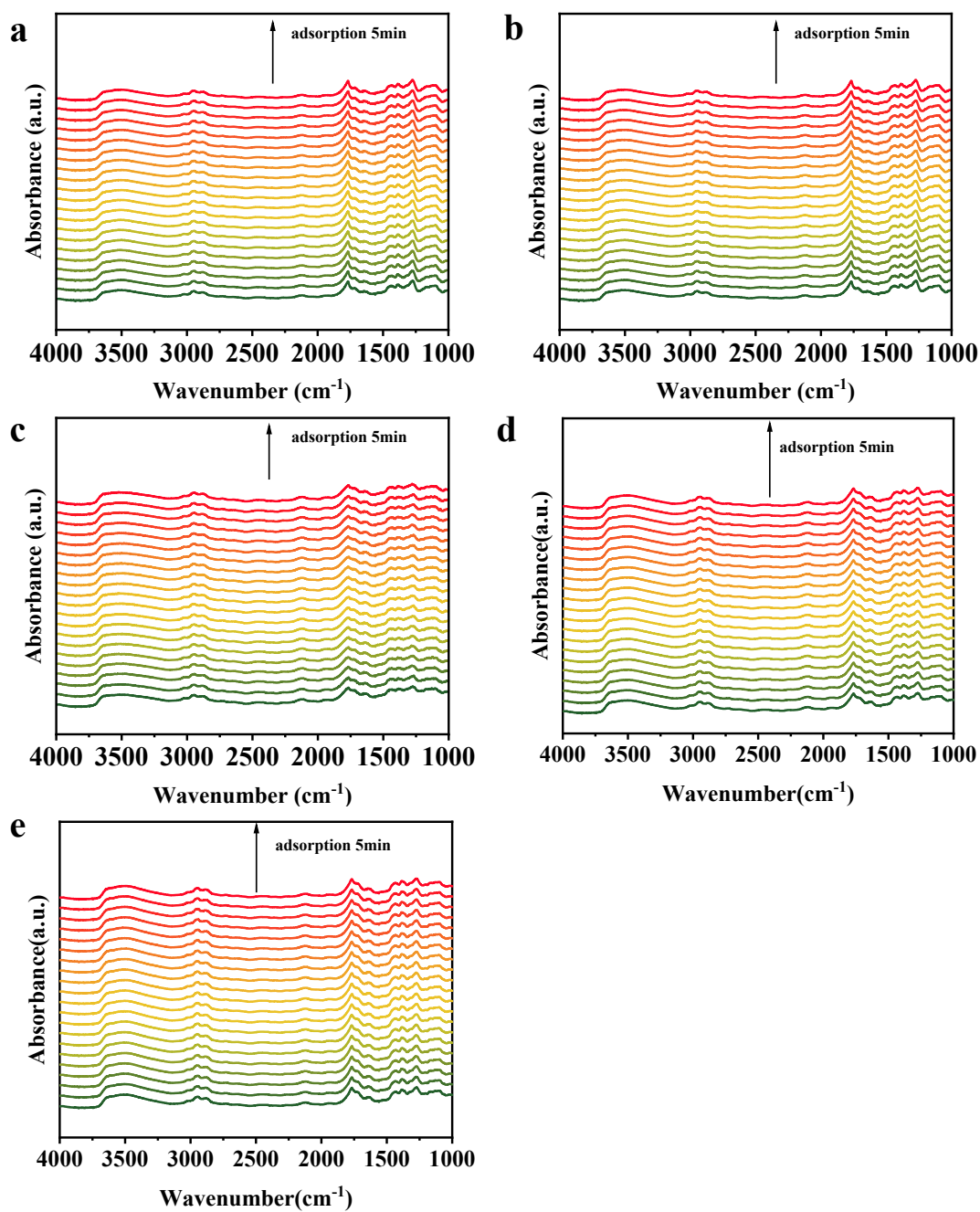
**Figure S2** *In-situ* DRIFTS spectra of dynamically adsorbed CO on FR samples are shown as a function of time. (a) FR, (b) FR-50, (c) FR-100, (d) FR-150, (e) FR-200.



**Figure S3** *In-situ* DRIFTS spectra of dynamically adsorbed H<sub>2</sub>O on FR samples are shown as a function of time. (a) FR, (b) FR-50, (c) FR-100, (d) FR-150, (e) FR-200.



**Figure S4** *In-situ* DRIFTS spectra of dynamically adsorbed benzene on FR samples are shown as a function of time. (a) FR, (b) FR-50, (c) FR-100, (d) FR-150, (e) FR-200.



**Figure S5** *In-situ* DRIFTS spectra of dynamically adsorbed formaldehyde on FR samples are shown as a function of time. (a) FR, (b) FR-50, (c) FR-100, (d) FR-150, (e) FR-200.