Supporting Information for

Influence of Ethylene Thermal Decomposition on Carbon Nanotube Growth: Insights from a Two-Zone Reactor Study

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Table S1. Carbon yield and I_G/I_D ratio as a function of T_p

T_p [°C]	T_g [°C]	Carbon yield [%]	I_G/I_D ratio [-]
500	700	135.9 ± 11.9	1.52 ± 0.10
600	700	131.1 ± 10.8	1.53 ± 0.10
700	700	140.0 ± 17.8	1.46 ± 0.10
800	700	201.8 ± 9.3	1.18 ± 0.14
900	700	187.5 ± 17.3	2.13 ± 0.83

Table S2. The composition and concentration of gases passing through the preheater at 25, 500, 600, 700, 800, and 900 °C using a micro-GC.

Preheater temp. [°C]	C_2H_4 [mole%]	H_2 [mole%]	CH_4 [mole%]	C_2H_6 [mole%]	C_2H_2 [mole%]	N_2 [mole%]
25	20.2	11.1				68.8
500	20.2	11.0				68.8
600	20.0	10.9		0.1		69.0
700	17.5	9.9		1.6		70.9
800	10.3	12.3	4.9	1.1	0.3	71.1
900	1.7	21.4	8.4	0.1	0.3	68.1

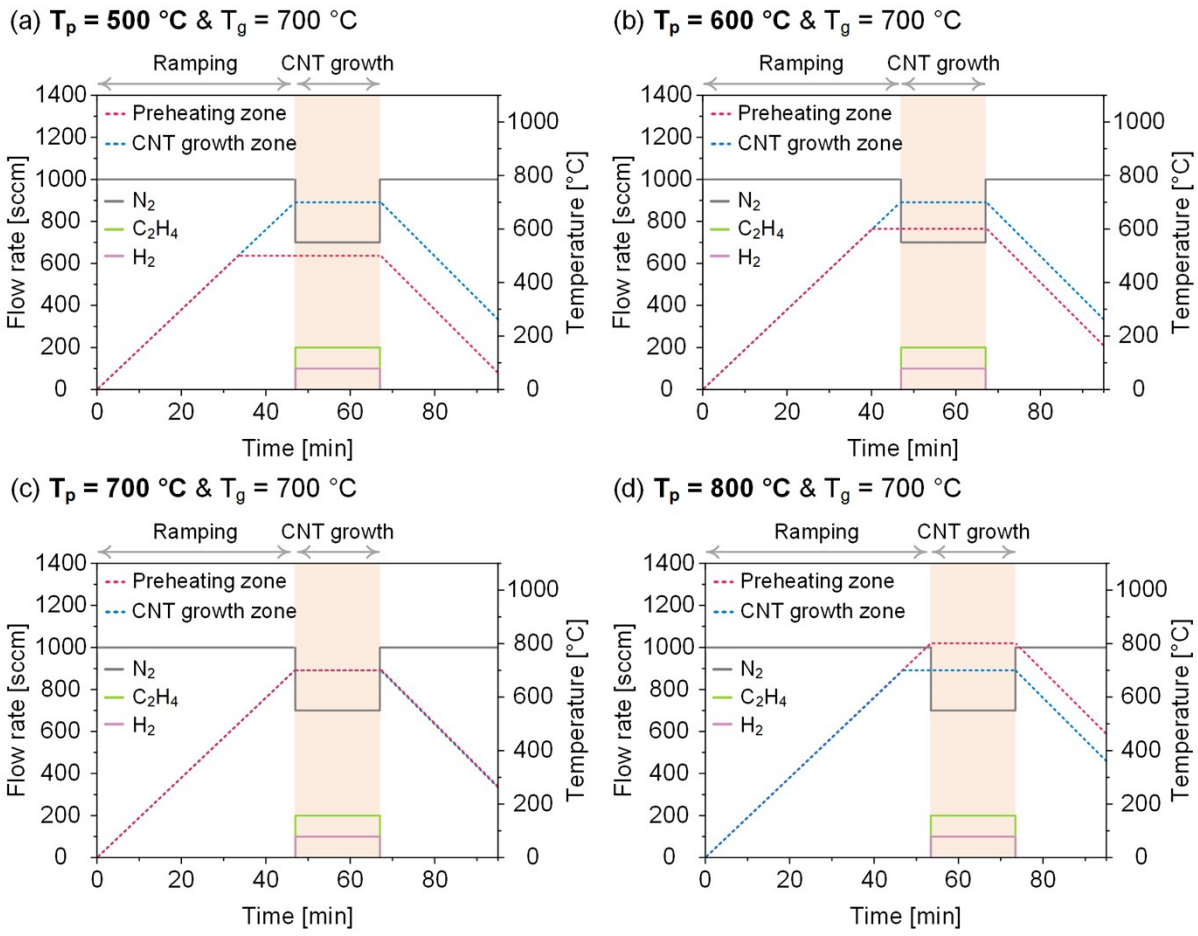

Fig. S1. Decoupled growth recipes at T_g of 700 °C, with T_p of (a) 500, (b) 600, (c) 700, and (d) 800 °C.

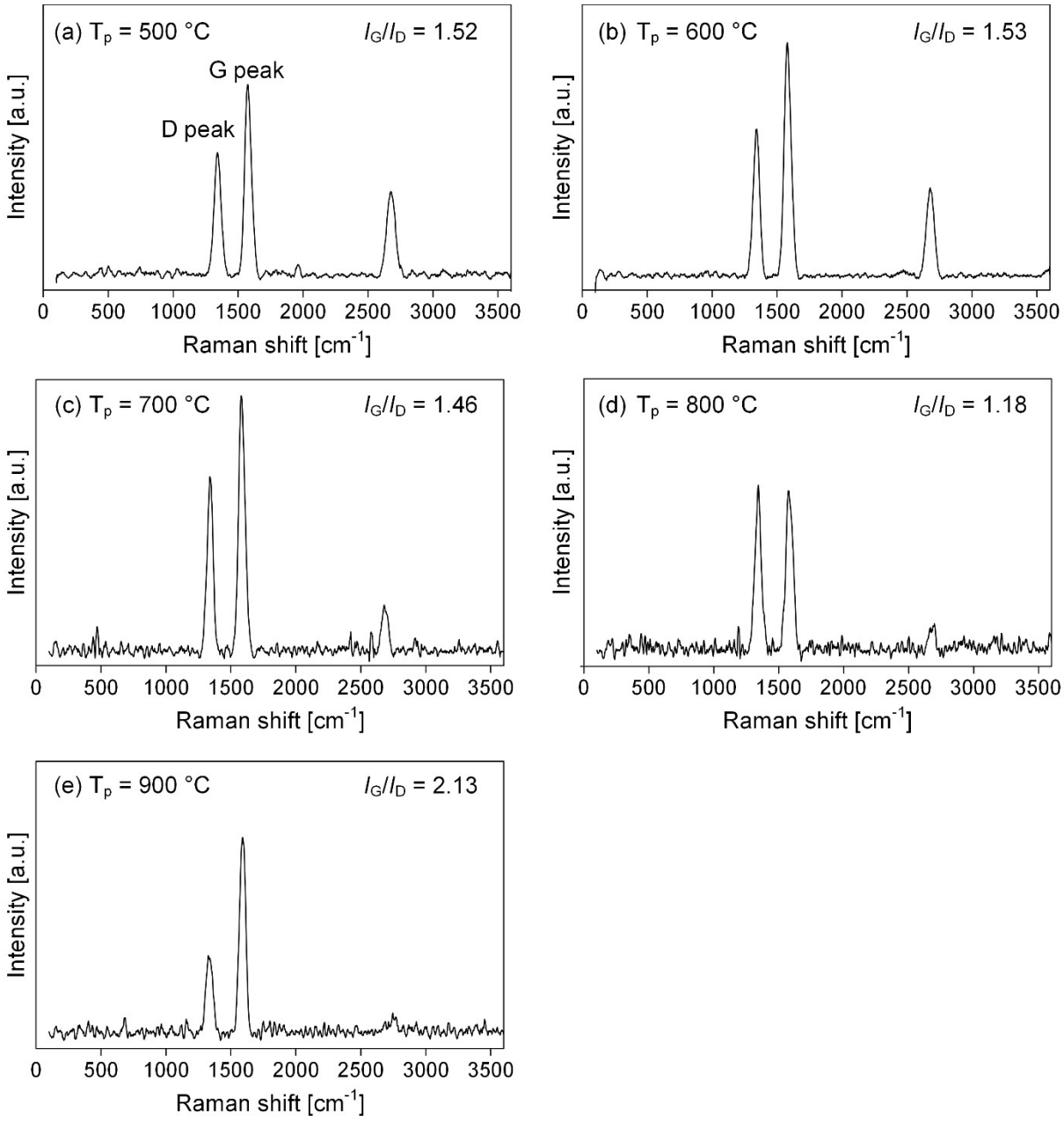

Fig. S2. Raman spectra of CNT synthesized at T_p of (a) 500, (b) 600, (c) 700, (d) 800, and (e) 900 °C.

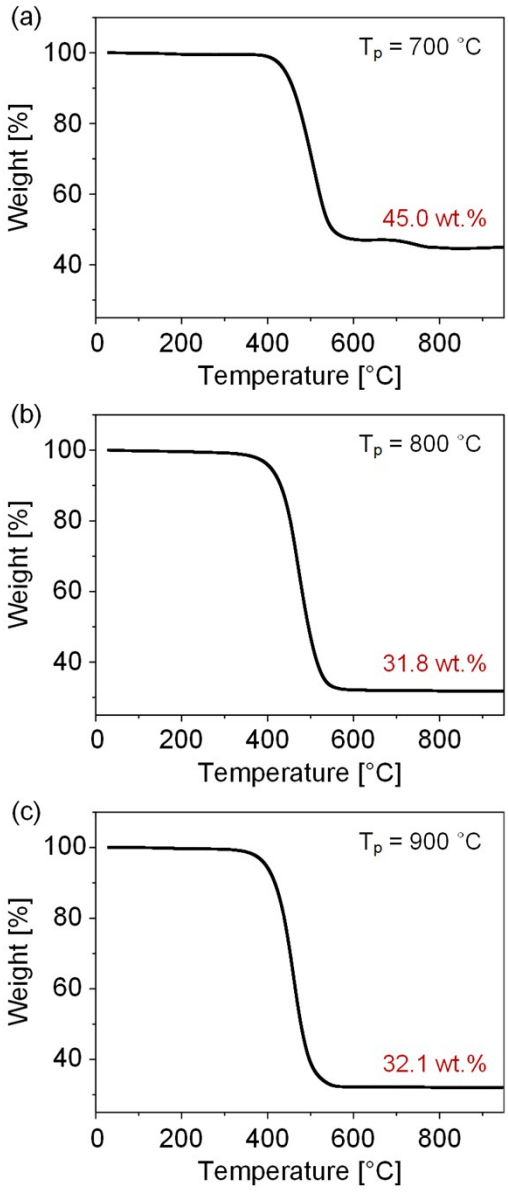

Fig. S3. TGA curves for synthesized CNTs at T_p of (a) 700, (b) 800, and (c) 900 °C.

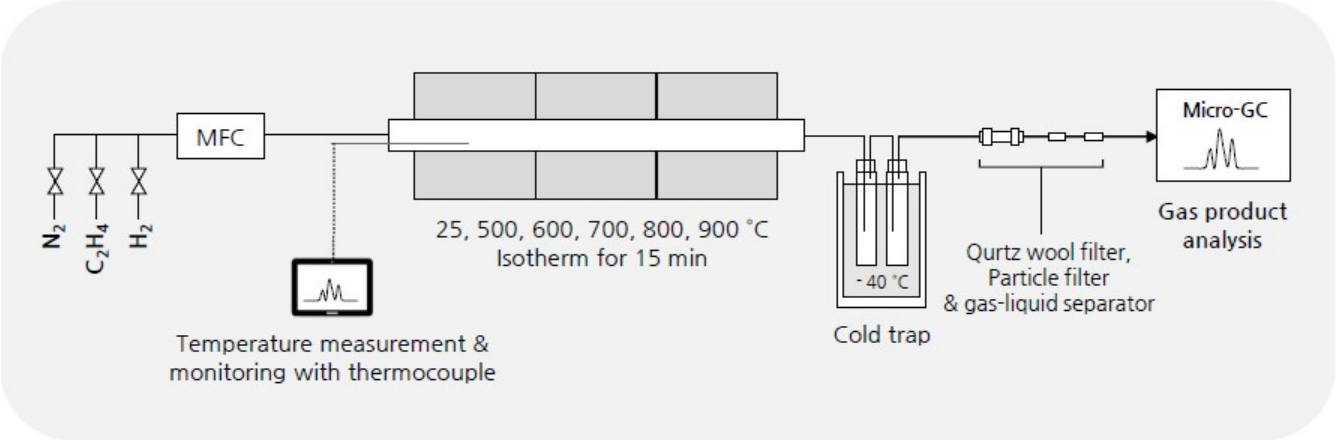

Fig. S4. Scheme of gas analysis using micro-GC.