# Supporting Information

## Ethylene oligomerization over nickel supported silica–alumina catalysts with high selectivity for $C_{10+}$ products

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Table S1. Textural properties of Ni/Si-Al(x, y) determined by $N_2$ adsorption-desorption.

Figure S1. $NH_3$-TPD profiles of Ni/Si-Al(x, y).

Table S2. The acid distribution of Ni/Si-Al(x, y) from $NH_3$-TPD.

Figure S2. Schematic diagram of ethylene oligomerization unit.

Table S1 Textural properties of Ni/Si-Al (x, y) determined by $N_2$ adsorption-desorption.

| Catalysts | $A_{BET}$ ($m^2$ $g^{-1}$) | $A_{ext}$ ($m^2$ $g^{-1}$) | $V_p$ ($cm^3$ $g^{-1}$) | $V_{mic}$ ($cm^3$ $g^{-1}$) | $V_{mes}$ ($cm^3$ $g^{-1}$) | $D_p$ ( nm ) |
|---|---|---|---|---|---|---|
| Ni/Si-Al (25, RT) | 180 | 190 | 0.71 | 0 | 0.71 | 15.7 |
| Ni/Si-Al (25, 80) | 219 | 256 | 0.79 | 0 | 0.79 | 14.5 |
| Ni/Si-Al (15.2, RT) | 107 | 120 | 0.41 | 0 | 0.41 | 15.3 |
| Ni/Si-Al (7.7, RT) | 97 | 108 | 0.40 | 0 | 0.40 | 16.4 |

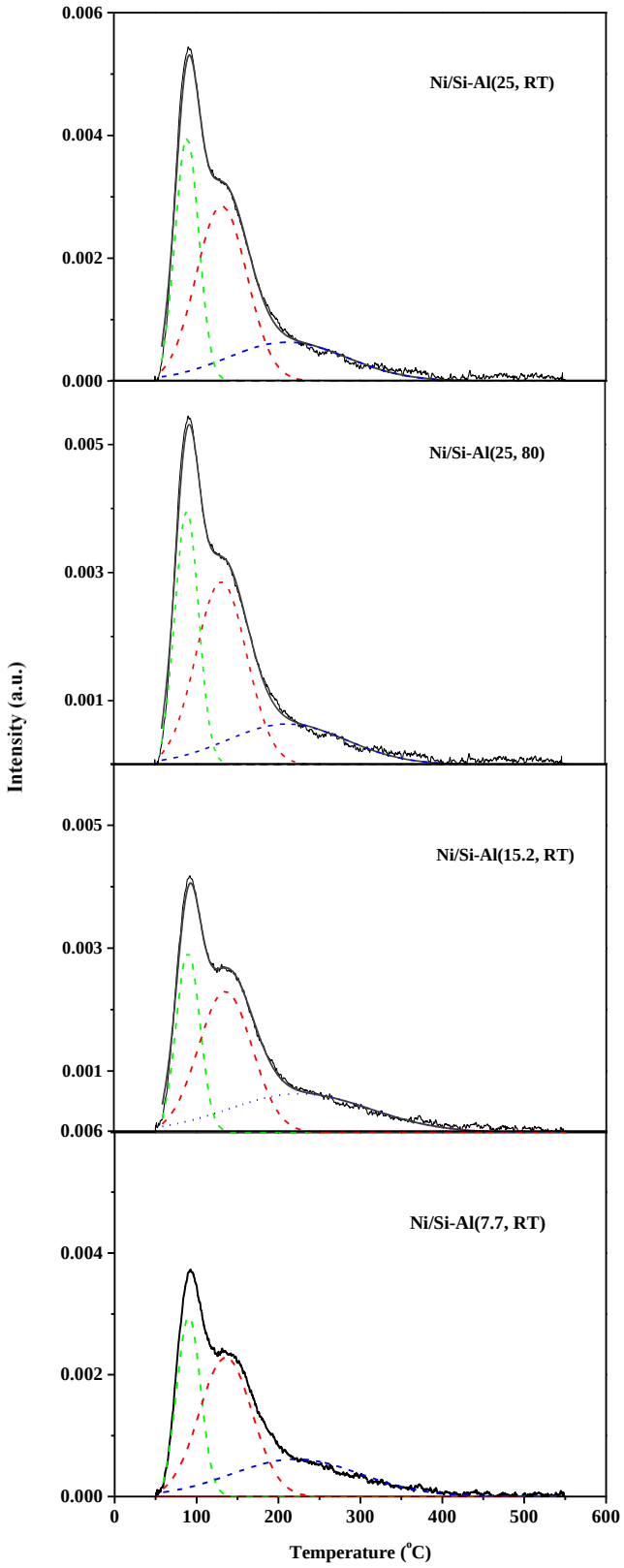


Figure S1. $NH_3$-TPD profiles of Ni/Si-Al(x, y).

Table S2. The acid distribution of Ni/Si-Al(x, y) from $NH_3$-TPD

| Catalysts | Acid amount (mmol/g)[c] | Weak acid (%) | Moderate acid (%) | Strong acid (%) |
|---|---|---|---|---|
| Ni/Si-Al (25, RT) | 0.5 | 29 | 47 | 24 |
| Ni/Si-Al (25, 80) | 0.49 | 27 | 51 | 22 |
| Ni/Si-Al (15.2, RT) | 0.41 | 26 | 45 | 29 |
| Ni/Si-Al (7.7, RT) | 0.37 | 28 | 47 | 25 |

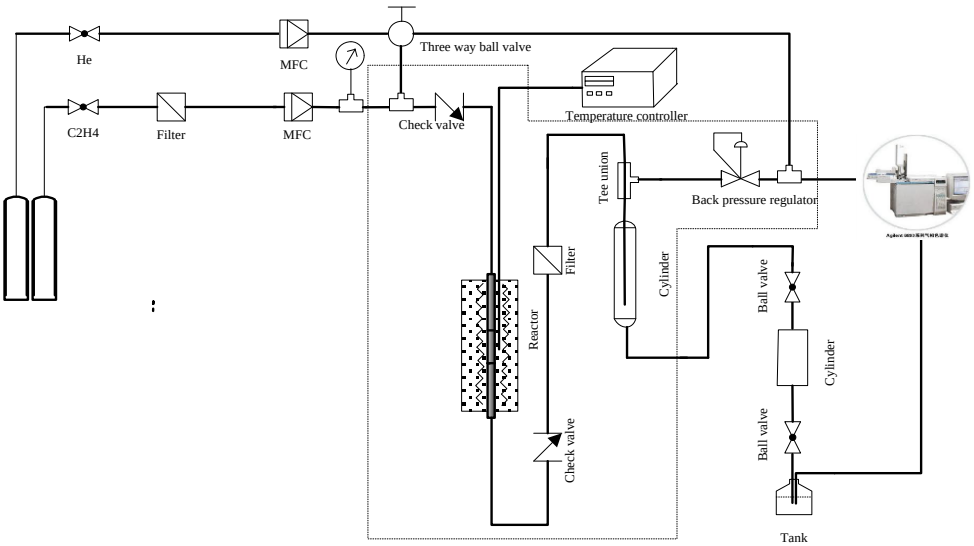


Figure S2. Schematic diagram of ethylene oligomerization unit.