[**https://doi.org/**](https://doi.org/)**10.21608/xxxxxxxxxxxxxx**

**Supporting Information**

**Highly Selective Conversion of Isopropanol to Propene Over CeFeO3/Spherical Silica Nanocomposite**

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Table.S1A.: TGA results for CFO/ Silica in nitrogen atmosphere

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| DTA peak max | DTG Peak max | Δ W(%) in the range | W (%) at the range end | Temperature range (°C) | Samples |
| 71 | 62 | 6.48 | 93.52 | RT−150 | Silica support |
|  |  | 2.99 | 90.53 | 150−750 |
|  |  | 9.47 | 90.53 | RT-750 |
|  |  |  |  |  |
|  |  | 10.43 | 89.57 | RT−169 | 10CFO/Silica |
| 246.288 | 227 | 5.18 | 84.39 | 169−400 |
|  |  | 2.38 | 82.01 | 400−750 |
|  |  | 17.99 | 82.01 | RT−750 |
|  |  |  |  |  |
|  |  | 10.23 | 89.77 | RT−169 | 20CFO/Silica |
| 244 | 230 | 6.19 | 83.58 | 169−300 |
| 286 |  | 1.44 | 82.14 | 300−400 |
|  |  | 2.53 | 79.16 | 400−750 |
|  |  | 20.39 | 79.16 | RT−750 |
|  |  |  |  |  |
|  |  | 10.43 | 89.57 | RT−150 | 30CFO/Silica |
| 238.315 | 231 | 17.91 | 71.66 | 150−400 |
|  |  | 1.4 | 70.26 | 400−750 |
|  |  | 29.74 | 70.26 | RT−750 |
|  |  |  |  |  |

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|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| DTA peak max | DTG Peak max | Δ W(%) in the range | W (%) at the range end | Temperature range (°C) | Samples |
|  | 73 | 10.68 | 89.32 | RT−170 | Blank Silica |
|  |  | 4.06 | 85.26 | 170−750 |
|  |  | 14.74 | 85.26 | RT-750 |
|  |  |  |  |  |
|  |  | 10.71 | 89.29 | RT−169 | 10CFO/Silica |
| 241 | 225 | 4.98 | 84.31 | 169−300 |
| 296 | 296 | 0.91 | 83.40 | 300−400 |
|  |  | 2.33 | 81.07 | 400−750 |
|  |  | 18.93 | 81.07 | RT−750 |
|  |  |  |  |  |
|  |  | 10.39 | 89.61 | RT−150 | 20CFO/Silica |
| 240,310 | 228 | 9.38 | 80.23 | 150−400 |
|  |  | 2.08 | 78.15 | 400−750 |
|  |  | 21.85 | 78.15 | RT−750 |
|  |  |  |  |  |
|  |  | 10.23 | 89.77 | RT−150 | 30CFO/Silica |
| 237.315 | 232 | 20.37 | 69.40 | 150−400 |
|  |  | 1.57 | 67.83 | 400−750 |
|  |  | 32.17 | 67.83 | RT−750 |
|  |  |  |  |  |

Table.S1.B: TGA results for CFO/Silica, in air atmosphere

C:\Users\computer city\Desktop\desktop\Graph13.tif

SFig.1: The effect of admission time of PY, and DMPY on the catalytic conversion of isopropanol over 20CFO/Silica 550