Electronic Supplementary Material (ESI) for RSC Advances.

-Supporting Information-

Synthesis of aluminum-modified 3D mesoporous TUD-1 materials and their hydrotreating performance of FCC diesel.

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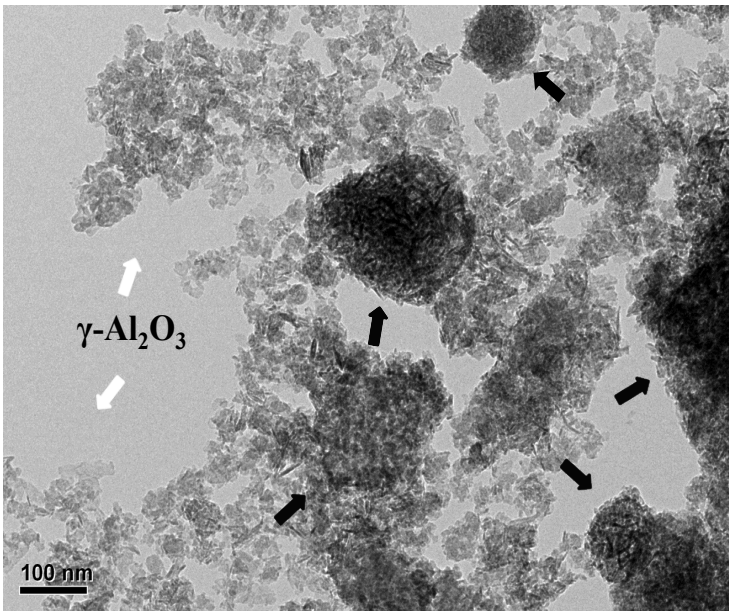

Fig. S1. TEM image of the Al_2O_3-AT-r-50 support.

In Fig. S1, it is clear to observe that the mechanical mixture of γ-Al_2O_3 and AT-r-50 consisted of two phases, the AT-r-50 phases were pointed by black arrows, which

have similar morphology to the AT-r materials as shown in Fig. 2, while the γ-Al_2O_3 phases with amorphous morphology were pointed by white arrows. The SEM picture indicates that the supports are just physical mixtures.

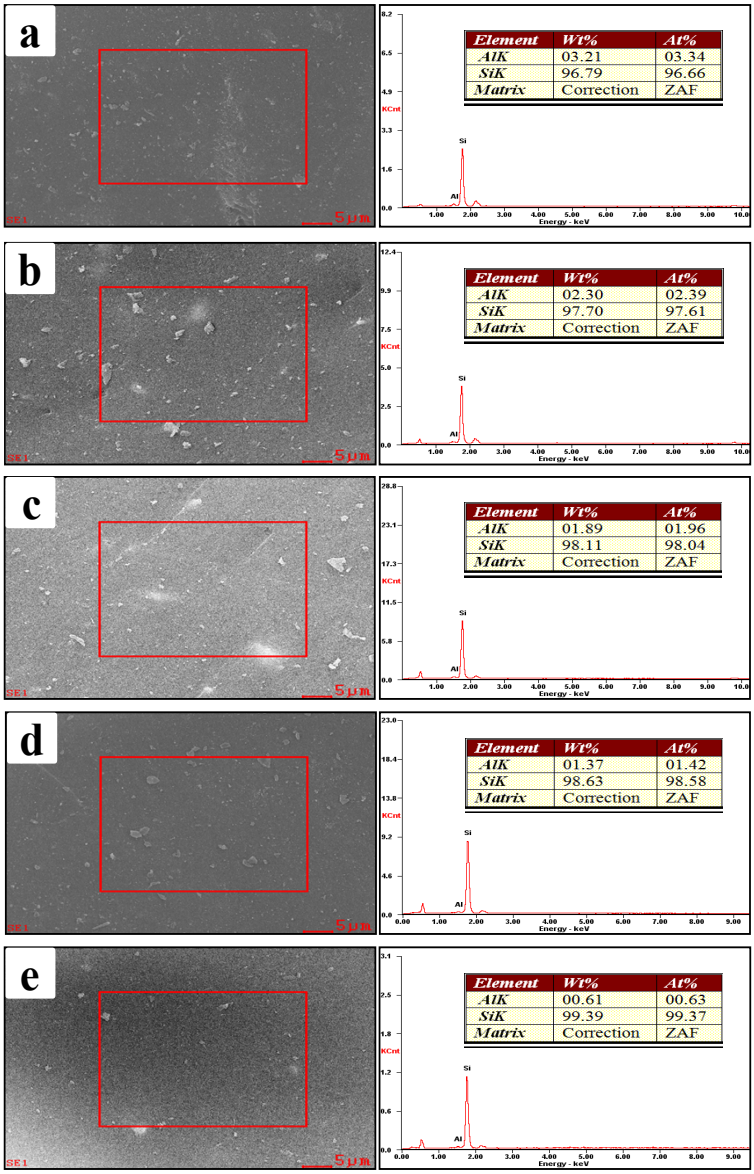

Fig. S2. SEM images and EDX analyses of different materials. (a) AT-r-25; (b) AT-r-50; (c) AT-r-75; (d) AT-r-100; (e) AT-r-200.

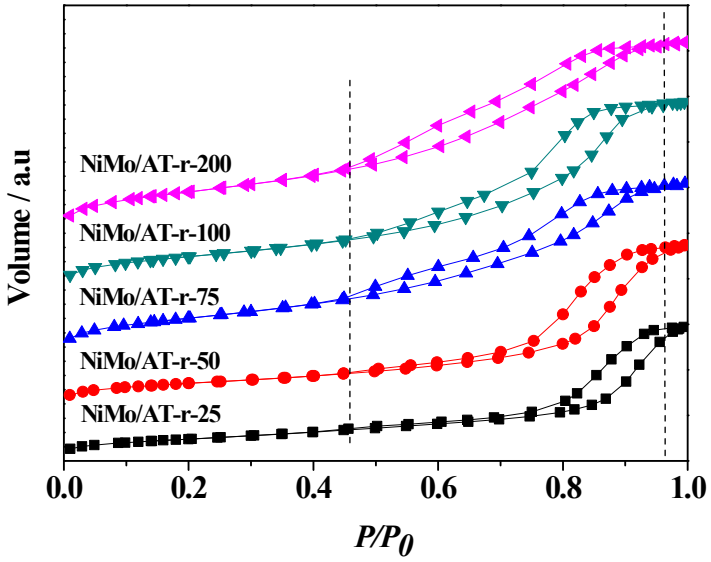

Fig. S3. The N_2 adsorption-desorption isotherms of NiMo/AT-r series catalysts.

Table S1. Textural properties of NiMo/AT-r series catalysts.

Catalyst Number	S_{BET} ($m^2 \cdot g^{-1}$)	V_{BJH} ($cm^3 \cdot g^{-1}$)	Pore Diameter (nm)
NiMo/AT-r-25	233	0.39	4.6
NiMo/AT-r-50	241	0.49	5.3
NiMo/AT-r-75	278	0.57	6.5
NiMo/AT-r-100	254	0.60	6.2
NiMo/AT-r-200	324	0.62	6.1
$NiMo/Al_2O_3$	167	0.34	8.3

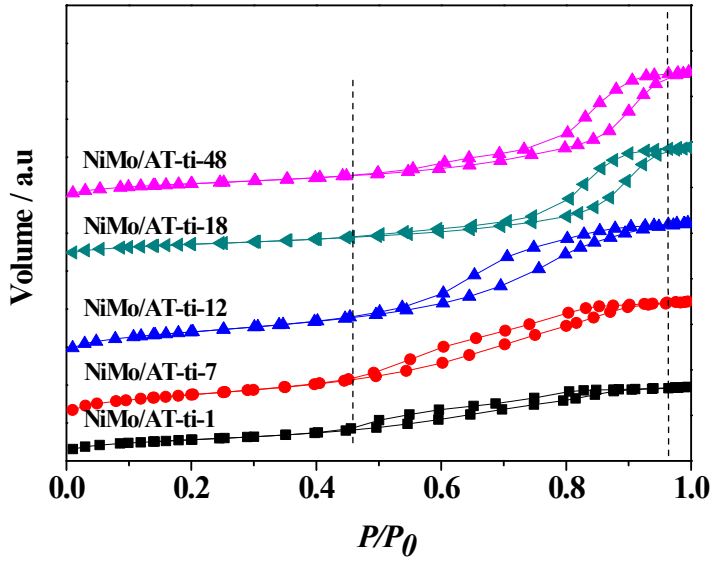

Fig. S4. The N_2 adsorption-desorption isotherms of NiMo/AT-ti series catalysts.

Table S2. Textural properties of NiMo/AT-ti series catalysts.

Catalyst Number	S_{BET} ($m^2 \cdot g^{-1}$)	V_{BJH} ($cm^3 \cdot g^{-1}$)	Pore Diameter (nm)
NiMo/AT-ti-1	211	0.28	3.5
NiMo/AT-ti-7	196	0.32	3.7
NiMo/AT-ti-12	309	0.58	4.0
NiMo/AT-ti-18	264	0.53	5.1
NiMo/AT-ti-48	273	0.51	5.8

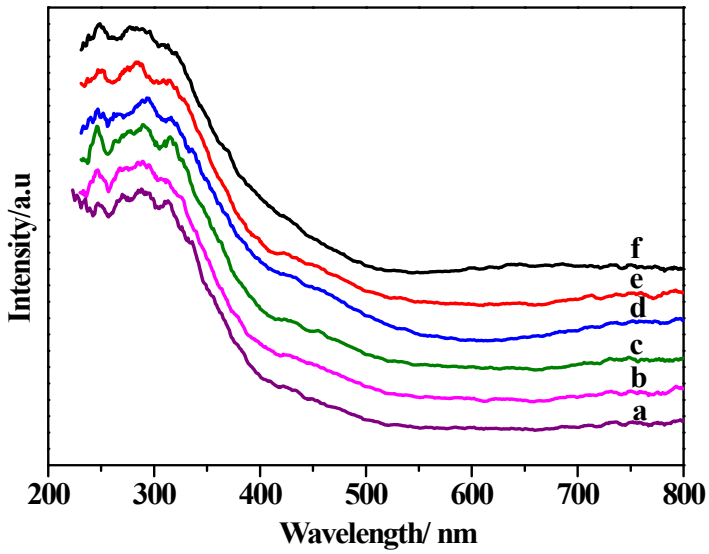

Fig. S5. UV-vis DRS spectra of NiMo/Al_2O_3-AT-r series catalysts.

(a) NiMo/Al_2O_3-AT-r-25; (b) NiMo/Al_2O_3-AT-r-50; (c) NiMo/Al_2O_3-AT-r-75; (d) NiMo/Al_2O_3-AT-r-100; (e) NiMo/Al_2O_3-AT-r-200; (f) NiMo/Al_2O_3