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SUPPORTING INFORMATION

MoO_3-TiO_2 synergy in oxidative dehydrogenation of lactic acid to pyruvic acid

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Table S1. *Textural properties of the catalysts.*

Catalyst	S_{BET} (m^2/g)	Pore Volume(cm^3/g)	Pore Size (nm)
TiO_2	11.7	0.06	21
MoO_3	0.5	0.00	18
TiO_2/MoO_3 (1:2)	3.1	0.02	22
MT10	10.7	0.05	19
MT8	10.7	0.07	26
MT5	11.5	0.06	20
MT2	10.7	0.06	21
MT1	11.0	0.06	21

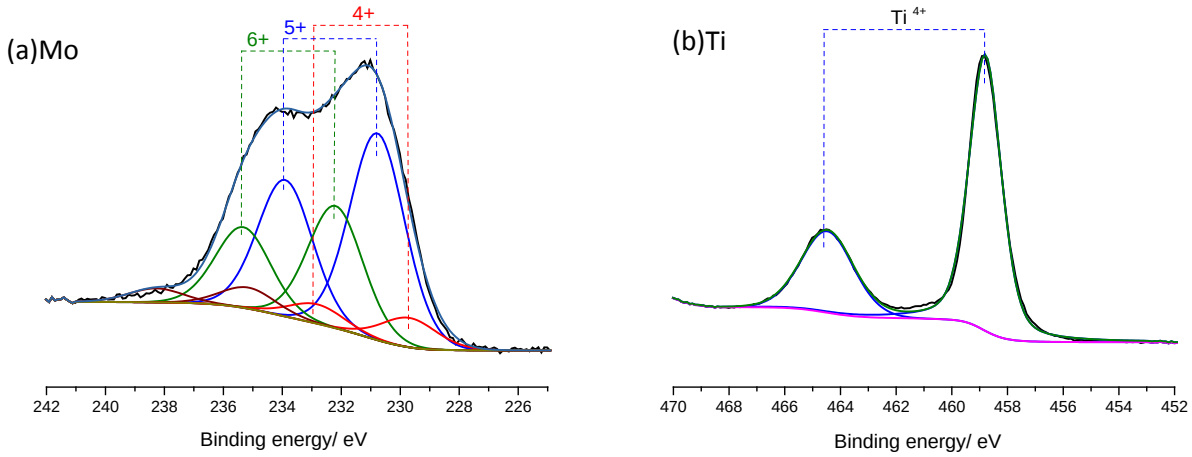


Figure S1. *(a) Mo 3d and (b) Ti 2p XPS spectra of MT2 spent upon LA conversion in N_2*

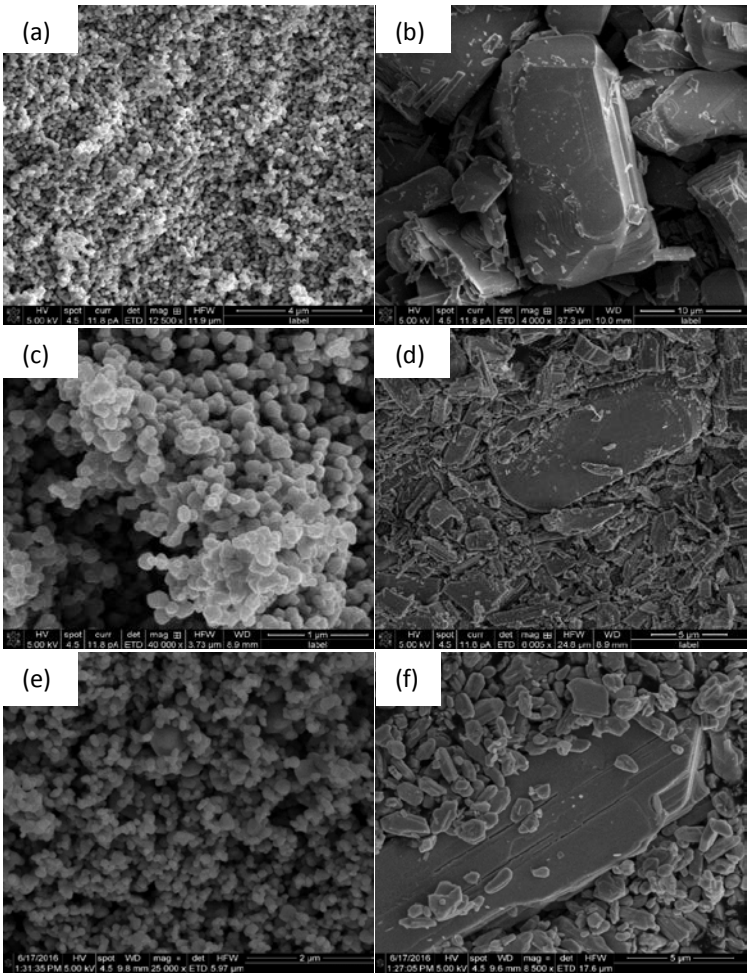
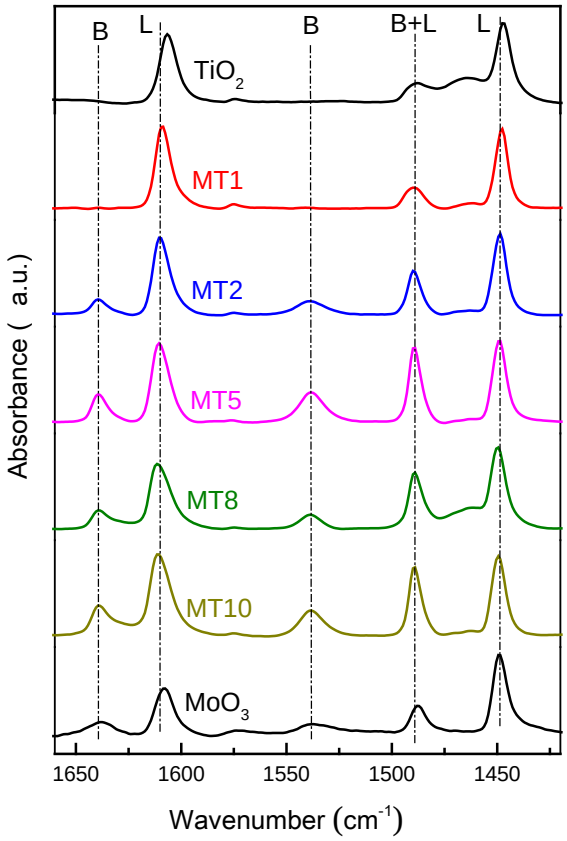


Figure S2. *SEM images of (a) TiO_2-fresh, (b) MoO_3-fresh, (c) TiO_2 spent in Air, (d) MoO_3 spent in Air, (e) TiO_2 spent in N_2 and (f) MoO_3 spent in N_2.*



Catalyst	N(total) B µmol/g	N(total) L µmol/g
MoO_3	14	22
MT10	27	41
MT8	16	43
MT5	32	43
MT2	12	29
MT1	0	32
TiO_2	0	33

Figure S3. *FTIR spectra of the adsorbed pyridine in the 1660-1400 cm^{-1} range after pyridine desorption at 200°C of samples: TiO_2, MoO_3 and binary molybdena-titania catalysts. L=coordinated pyridine on Lewis acid site, B=pyridinium ion formed on Brønsted acid site.*

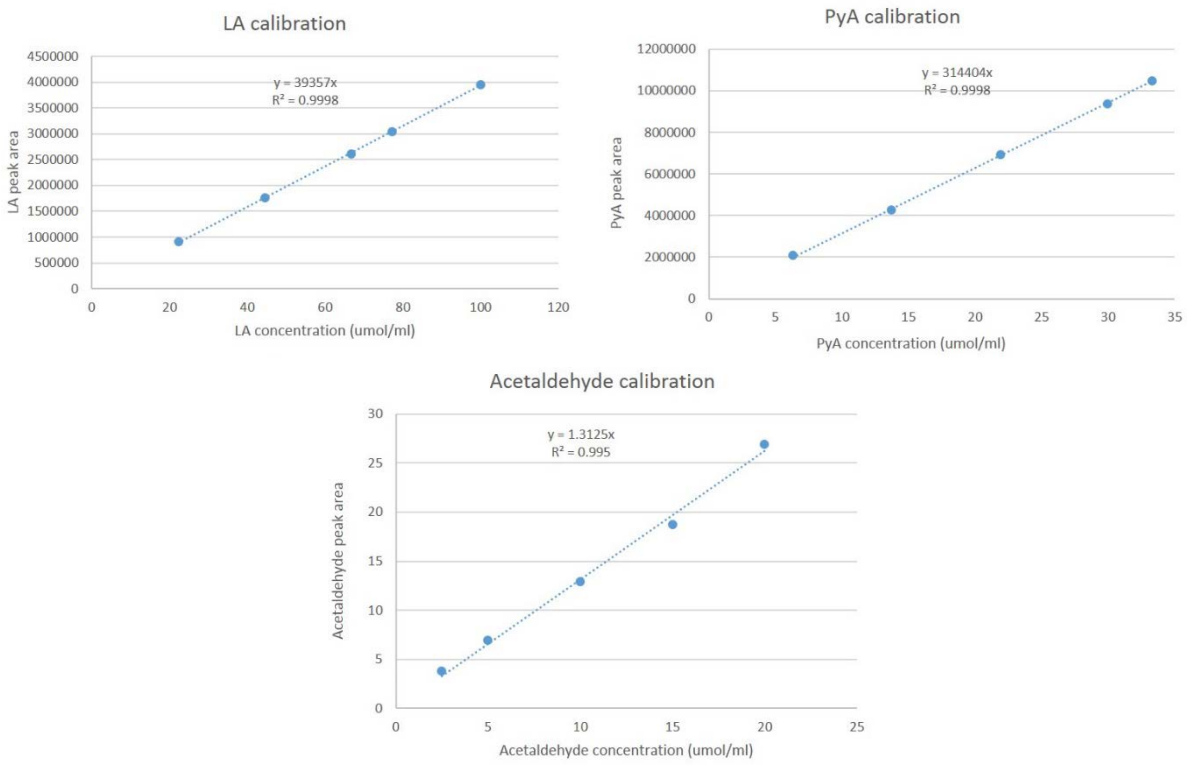


Figure S4. *Calibration curves of lactic acid, pyruvic acid and acetaldehyde.*

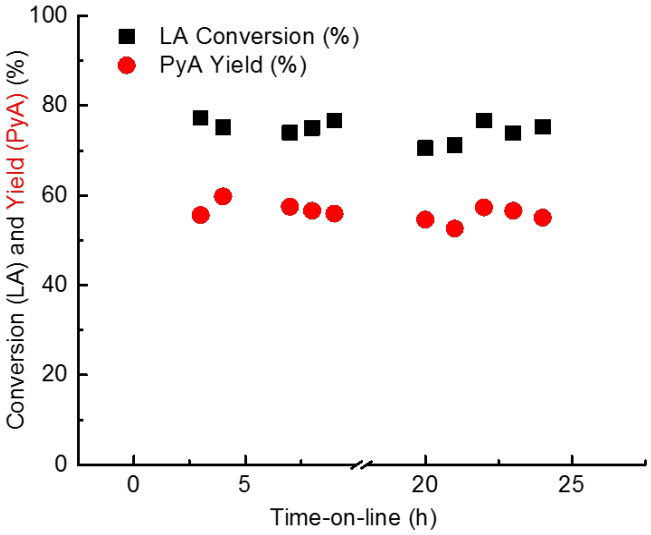


Figure S5. *Oxidative dehydrogenation of lactic acid over MT2 catalyst at 200°C.*

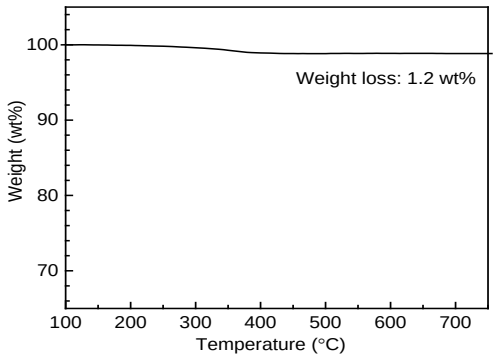


Figure S6. *TGA mass loss curve of spent catalyst MT2 after 24h oxidative dehydrogenation of lactic acid.*