Electronic Supplementary Material (ESI) for Dalton Transactions. This journal is © The Royal Society of Chemistry 2017

<Electronic Supplementary Information>

Enantiomeric two-fold interpenetrated 3D zinc(II) coordination networks

as catalytic flat-form: significant difference between water within cage and

trace water in transesterification

Eunkyung Choi, Minjoo Ryu, Haeri Lee and Ok-Sang Jung*

Department of Chemistry, Pusan National University, Pusan 46241, Korea



Figure S1. ¹H NMR spectra of L (a) and $[Zn(\mu-OH)(L)]_3(ClO_4)_3 \cdot 5H_2O$ (b) in Me₂SO-d₆ (†, H₂O; *, CD₃CHD₂SO).



Figure S2. TGA (dashed lines) and DSC (solid lines) curves of $[ZnBr_2(L)]$ (red) and $[Zn(\mu-OH)(L)]_3(ClO_4)_3$ ·5H₂O (blue).



Figure S3. FT-IR spectra of $[ZnBr_2(L)]$ (a) and $[Zn(\mu-OH)(L)]_3(ClO_4)_3 \cdot 5H_2O$ (b).



Figure S4. ORTEP drawings around C_3 -symmetric $Zn_3(\mu$ -OH)₃ ring.



Figure S5. The crystal structures and geometry around Zn(II) ions of [ZnBr₂(L)].



Figure S6. ¹H NMR on the procedure of transesterification using $[Zn(\mu-OH)(L)]_3(ClO_4)_3$ ·5H₂O ((a) 0 h, (b) 5 min, (c) 15 min, (d) 45 min).

Substrate	Yield (%)
Ethanol	100
<i>n</i> -Propanol	39.2
n-Butanol	9.9
<i>iso</i> -Propanol	0.23
2-Butanol	0.077
tert-Butanol	0

Table S1. The catalytic yields of transesterification reaction at 60 min according to the substrates

Catalysts	Yield (%)
1	100
$Zn(ClO_4)_2 + L$	70
2	5.2

Table S2. The catalytic yields of transesterification reaction at 60 min according to catalysts

Table S3. The catalytic yields of transesterification reaction at 60 min according to the

 percentage of trace water of ethanol

% of water in ethanol solution	Yield (%)
Absolute ethanol (99.9%)	100
98% ethanol	48.7
95% ethanol	5.5

	Zn(II)
After transesterification in methanol	445.923 ppm (7.96%)
After transesterification in absolute EtOH	-
After transesterification in 95% EtOH	18.992 ppm (5.53%)

Table S4. ICP-OES data of the transesterification solution using $1.5H_2O$ as a catalyst

*The samples were diluted to 1 : 20 (v/v = sample : H₂O).



Figure S7. Plot showing the recycling catalytic yield of transesterification of phenyl acetate using $[Zn(\mu-OH)(L)]_3(ClO_4)_3 \cdot 5H_2O$ in absolute ethanol (inset shows the catalytic yield at 60 min).



Figure S8. Powder X-ray diffraction patterns of $[Zn(\mu-OH)(L)]_3(ClO_4)_3 \cdot 5H_2O$ before (a) and after (b) transesterification reaction.