

Supporting Information

-for-

Direct observation of aluminum ions produced via pulsed laser ablation in liquid: a ‘turn-on’ fluorescence study

Seulki Lee, Ahreum Ahn, and Myong Yong Choi*

Department of Chemistry and Research Institute of Natural Science, Gyeongsang National University, Jinju 660-701, Republic of Korea

*Corresponding author

Tel.: +82 55 772 1492 (M. Y. Choi)

E-mail address: mychoi@gnu.ac.kr (M. Y. Choi)

Keywords: Aluminum nanoparticles, Al₂O₃ nanoparticles, SalophenH₂, [Al(salophen)]⁺ complex, Pulsed laser ablation in liquid (PLAL)

Table of Contents

Figure S1	S3
Figure S2	S4
Figure S3	S6

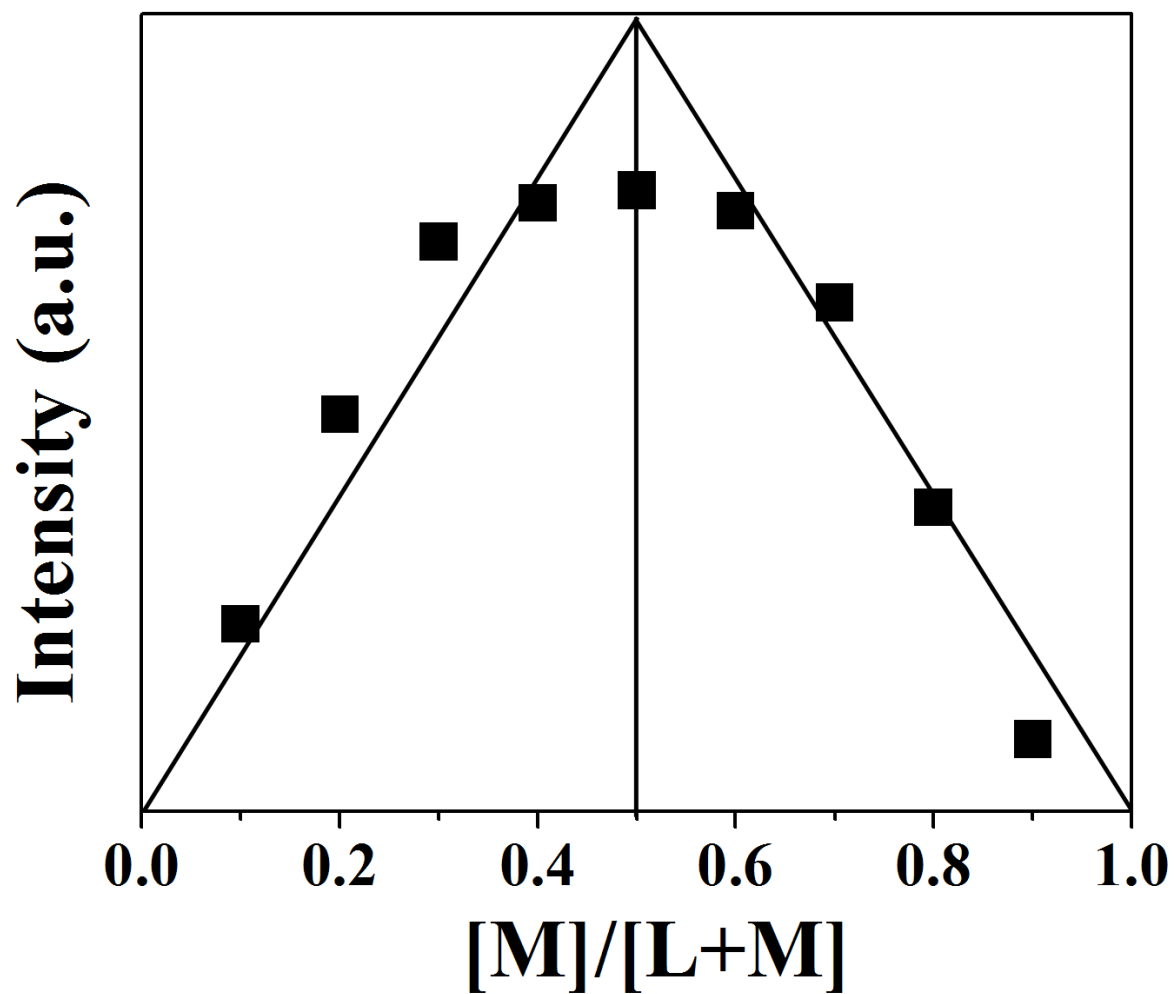
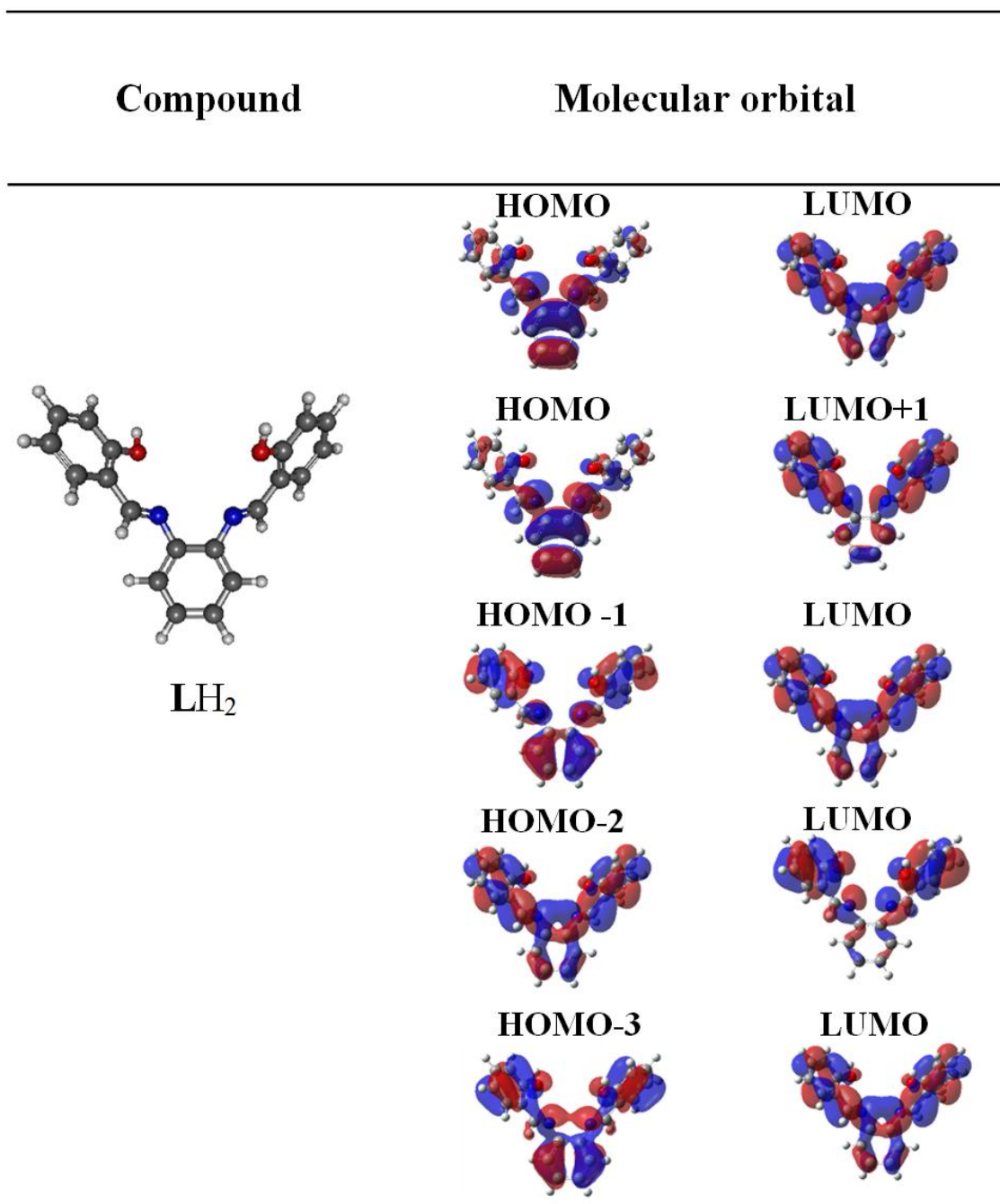


Figure S1: Job's plot analysis of the fluorescence titration spectra for the complexation of Al^{3+} with LH_2 , showing a maximum at a mole fraction of 0.5 with a symmetrical peak. This indicates a 1:1 complex, $[\text{AlL}]^+$, between ligand L^{2-} and the Al^{3+} ion.



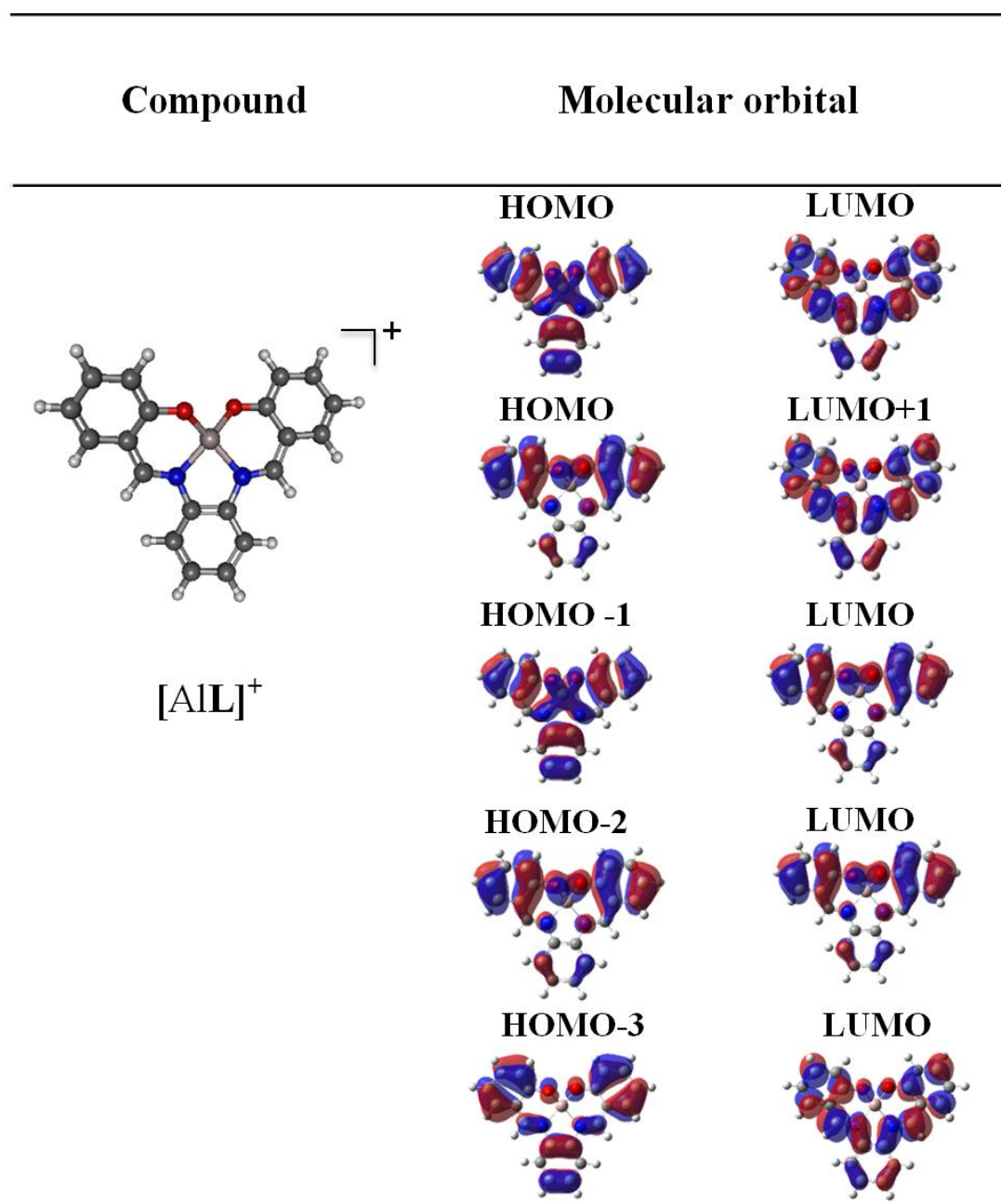


Figure S2: Optimized structures and molecular orbitals of LH₂ and [AIL]⁺ calculated by TD-DFT method at the B3LYP/6-31G* level using Gaussian 09.

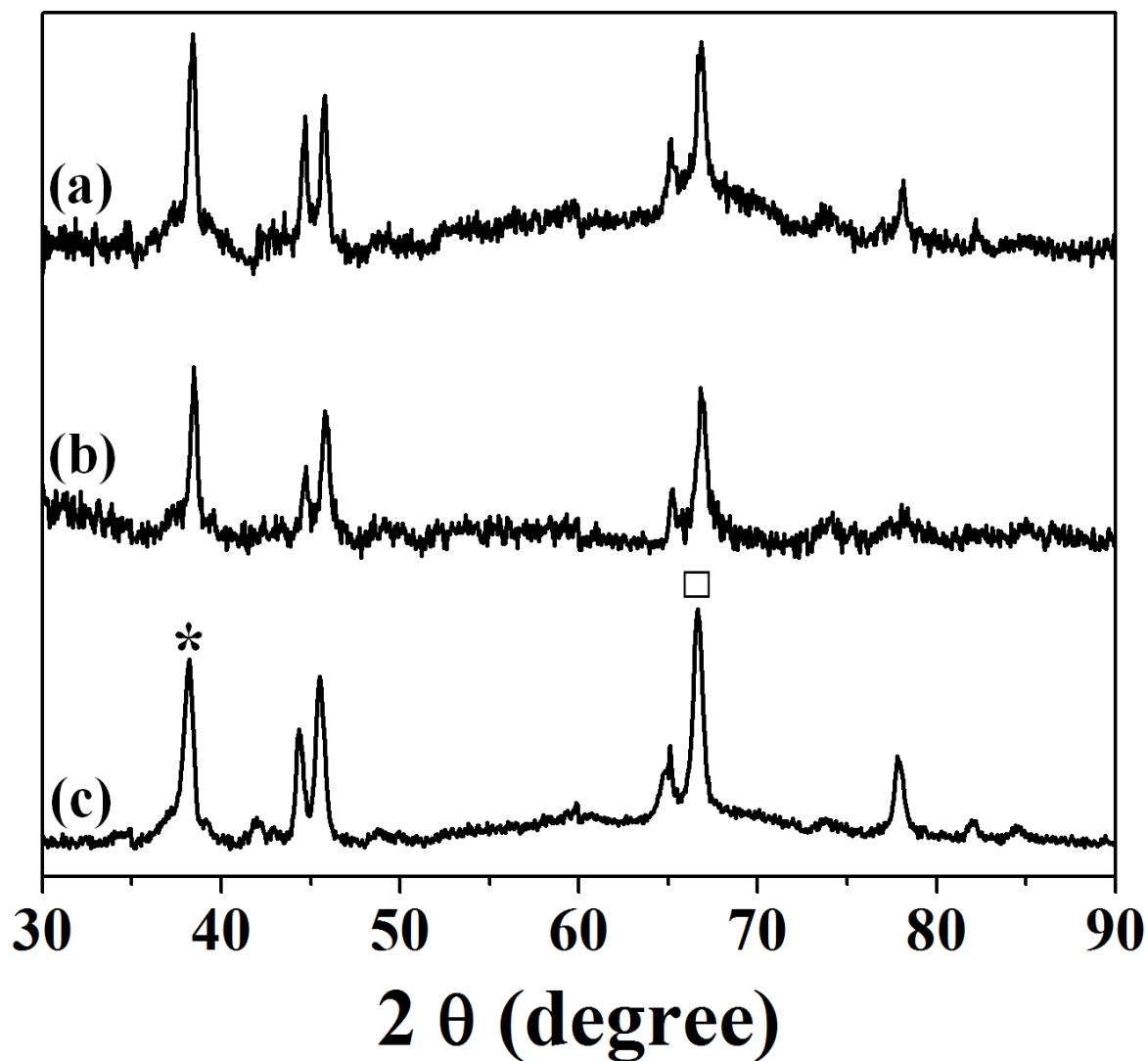


Figure S3: XRD patterns of the nanoparticles produced by PLAL with (a) degassing, (b) O₂ bubbling, and (c) H₂ bubbling conditions. The major peaks of Al and γ -Al₂O₃ nanoparticles are marked by an asterisk and square, respectively.