Electronic Supplementary Information

Following the Thermal and Chemical Activation of Supported Au Clusters using X-ray Absorption Spectroscopy

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Figure S1: EXAFS fitting in R space of thermally and chemically treated Al_2O_3 supported $Au_{25}(SC_8H_9)_{18}^-$ clusters with 2.5% loading by metal weight.

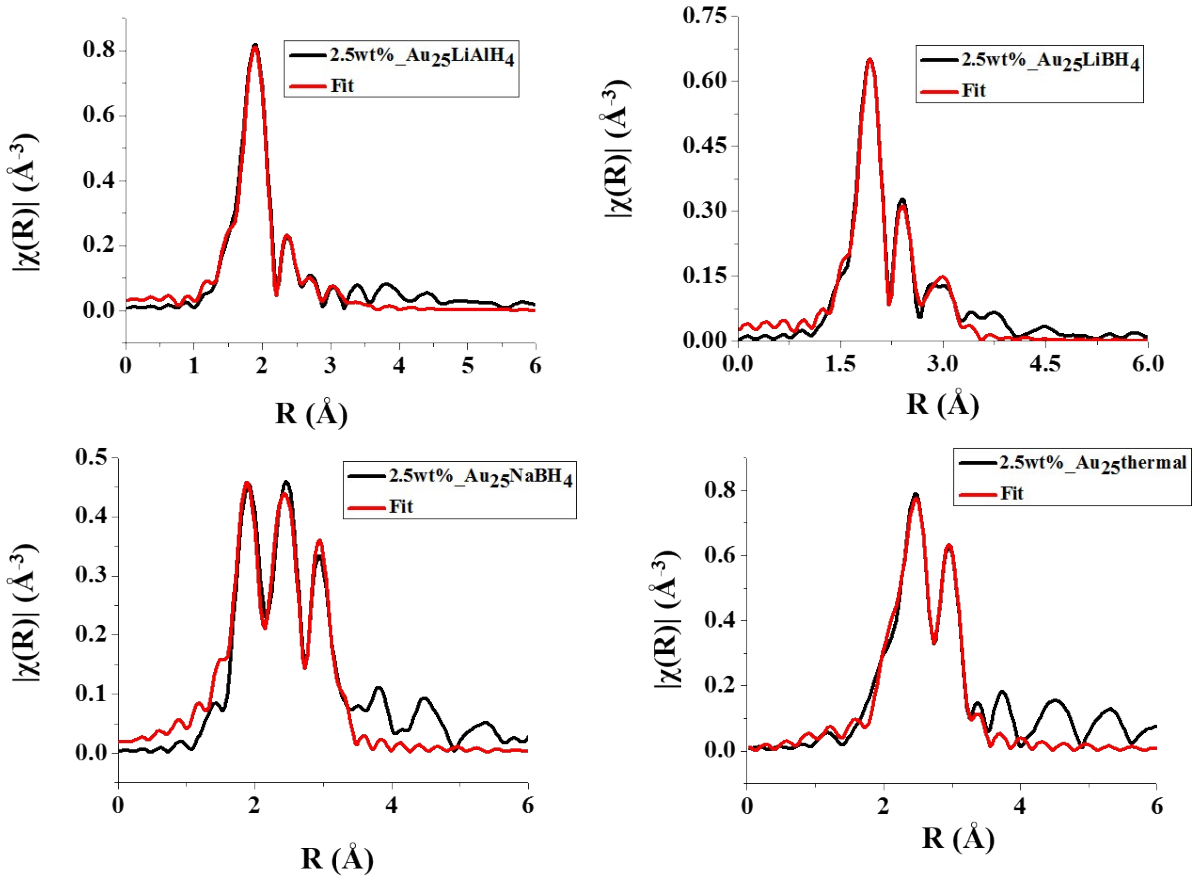

Figure S2: XANES data of thermally and chemically treated Al_2O_3-supported $Au_{25}(SC_8H_9)_{18}$ clusters with a) 2.5% loading by metal weight, b) 0.75% loading by metal weight, and c) 0.2% loading by metal weight.

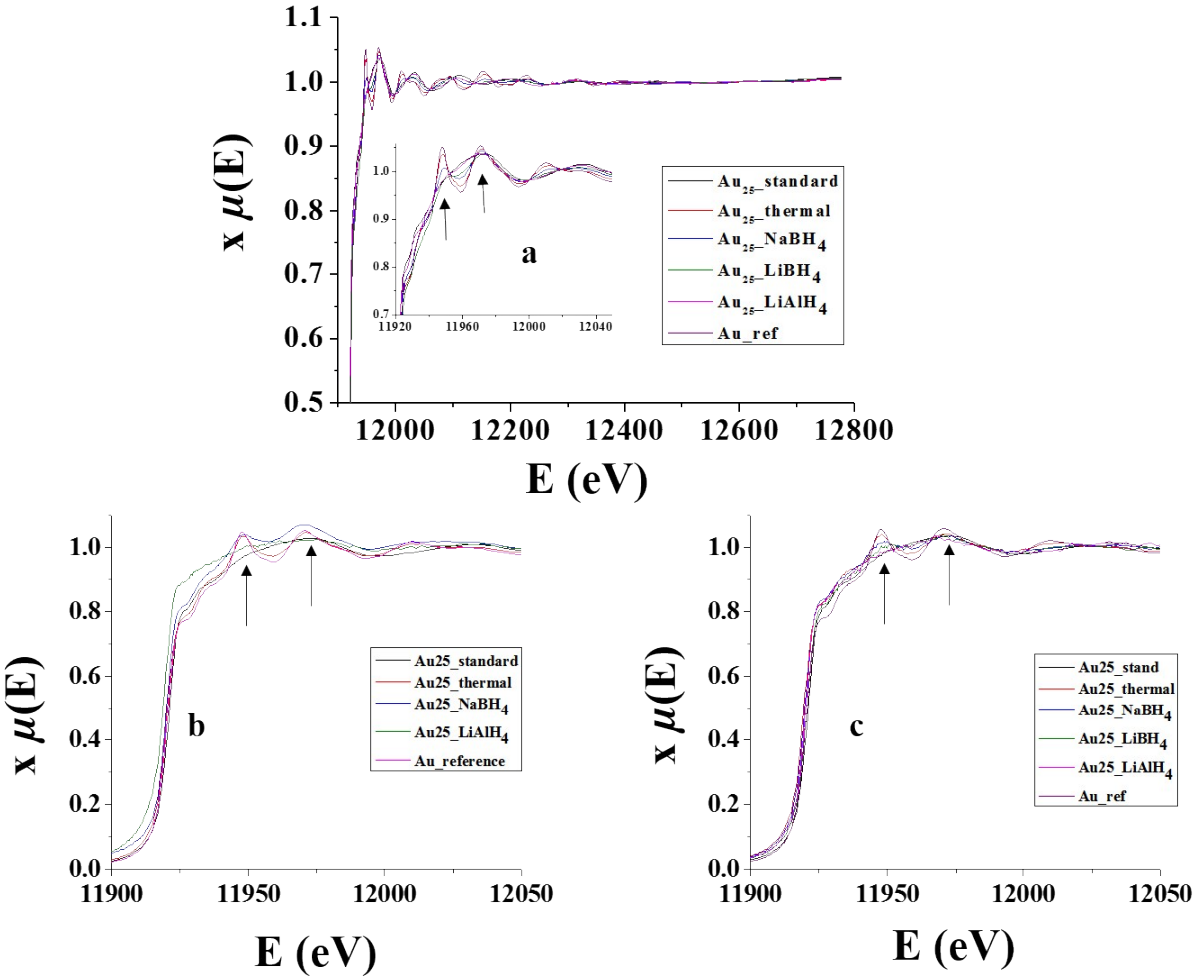

Table S1: EXAFS fitting parameters of chemically and thermally treated Al_2O_3 supported $Au_{25}(SC_8H_9)_{18}^-$ clusters with 2.5% loading by metal weight.

$LiAlH_4$	**CN**	**R/Å**	**σ^2/Å^2**	**E_0 shift/eV**
Au-S	1.1 (2)	2.295 (1)	.001 (1)	-3.5 (1.7)
Au-Au (core)	1.44[1]	2.701 (4)	.008 (4)	-1.2 (5.3)
Au-Au (surface)	1.92[1]	2.84 (9)	.02 (1)	-1.2 (5.3)
Au-Au (staple)	2.88[1]	3.3 (1)	.02 (2)	-1.2 (5.3)
$LiBH_4$	**CN**	**R/Å**	**σ^2/Å^2**	**E_0 shift/eV**
Au-S	0.9 (2)	2.32 (1)	.0005 (9)	1.0 (2.0)
Au-Au (core)	1.44[1]	2.74 (4)	.005 (4)	1.3 (2.8)
Au-Au (surface)	1.92[1]	2.86 (5)	.007 (5)	1.3 (2.8)
$NaBH_4$	**CN**	**R/Å**	**σ^2/Å^2**	**E_0 shift/eV**
Au-S	0.5 (1)	2.304 (7)	.011 (9)	5.2 (5)
Au-Au	6.4 (5)	2.840 (7)	.001 (1)	5.2 (5)
Thermal	**CN**	**R/Å**	**σ^2/Å^2**	**E_0 shift/eV**
Au-Au	9.4 (5)	2.847 (4)	.0091 (6)	5.2 (3)

[1]Au-Au coordination numbers were fixed as discussed in ref [10, 16]