

Near-infrared electrogenerated chemiluminescence of
 $\text{Au}_{25}\text{L}_{18}$: a mechanistic study

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The molecular $\text{Au}_{25}\text{L}_{18}$ clusters have received increasing attention over the last decade because of their unique inherent optical and electronic properties.¹ In addition, they are being interrogated for catalysis and analytical applications. In this report, we discuss how the optical and electrochemical properties of Au_{25}^z ($z=1-, 0$ and $1+$) family were exploited for electrogenerated chemiluminescence (ECL). Specifically, we present our recent achievements in Au_{25}^z ($z=1-, 0$ and $1+$) ECL in the presence of tripropyl amine (TPrA) as a co-reactant. The produced NIR-ECL is anticipated to be utilized in wide range of applications including *in vivo* imaging. Our newly developed spooling technique² enables us to gain insight into the emission mechanisms, the electronic properties, and radical chemistry of the various Au_{25}^z ($z=1-, 0$ and $1+$) species.

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2. K. N. Swanick, M. Hesari, M. S. Workentin and Z. Ding, *J. Am. Chem. Soc.*, 2012, **134**, 15205-15208.