

Supporting Information

Circularly Polarized Luminescence of Curium: A New Characterization of the 5f Actinide Complexes

Ga-Lai Law,^{‡,1} Christopher M. Andolina,^{‡,1} Jide Xu,¹ Vinh Luu,³ Philip X. Rutkowski,² Gilles Muller,³ David K. Shuh,² John K. Gibson,² Kenneth N. Raymond.^{*,1,2}

AUTHORS ADDRESSES

¹ Department of Chemistry, University of California, Berkeley, California 94720-1460.

² Chemical Sciences Division, Lawrence Berkeley National Laboratory, Berkeley, California 94720

³ Department of Chemistry, San José State University, One Washington Square, San José, California, 95192-0101

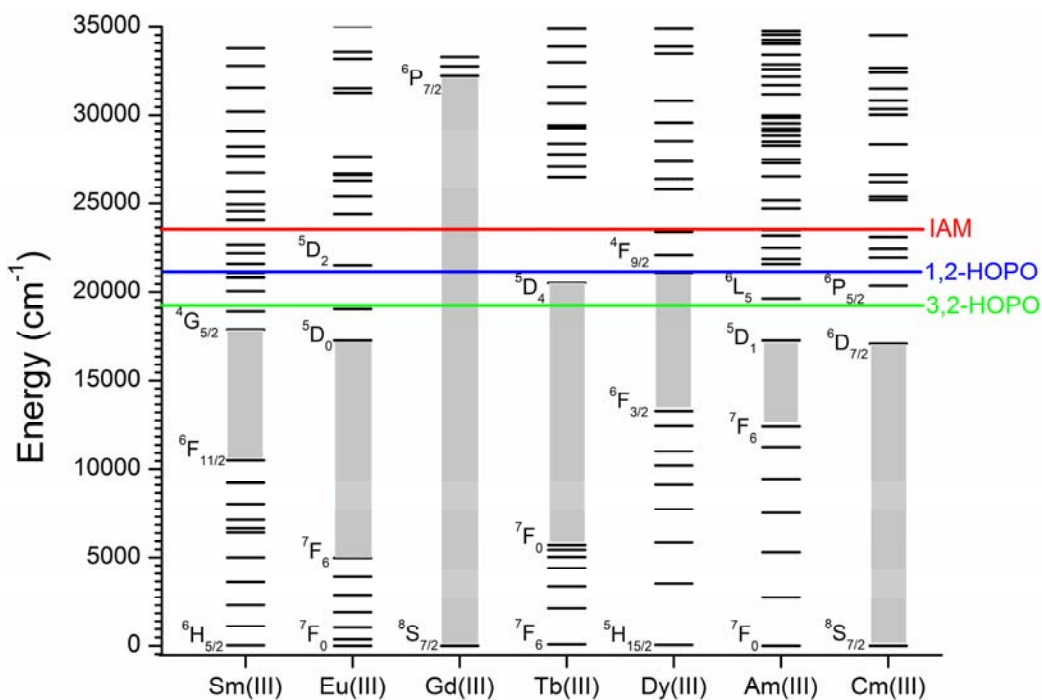


Figure S1. A diagram showing energy levels of selected lanthanides,¹⁴ actinides^{5,6} and the triplet state energy of three chelator/chromophores (7-9) used in our laboratory. The gray bar indicates the energy gap between the ground manifold and the excited states. The term symbols in the text (e.g. $^5D_{7/2}$) are primed to indicate that the Russell-Saunders's coupling scheme is not strictly valid for the actinides, because of the comparable strength of the spin-orbit and electron-electron interactions.⁽¹¹⁻¹³⁾

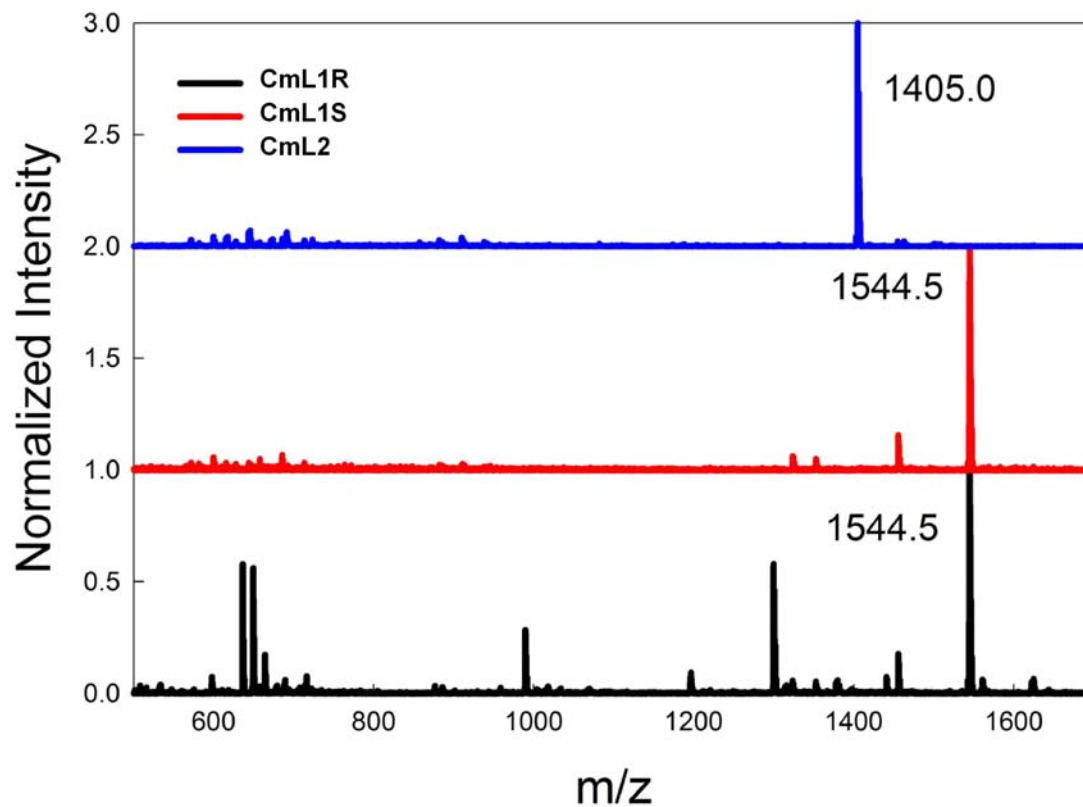


Figure S2. Normalized mass spectra of the three complexes CmL1R, CmL1S, and CmL2.

REFERENCES

- (1) Carnall, W. T.; Fields, P. R.; Rajnak, K. *The Journal of Chemical Physics* **1968**, *49*, 4424.
- (2) Carnall, W. T.; Fields, P. R.; Rajnak, K. *The Journal of Chemical Physics* **1968**, *49*, 4443.
- (3) Carnall, W. T.; Fields, P. R.; Rajnak, K. *The Journal of Chemical Physics* **1968**, *49*, 4447.
- (4) Carnall, W. T.; Fields, P. R.; Rajnak, K. *The Journal of Chemical Physics* **1968**, *49*, 4450.
- (5) Carnall, W. T.; Rajnak, K. *The Journal of Chemical Physics* **1975**, *63*, 3510.
- (6) Pappalardo, R. G.; Carnall, W. T.; Fields, P. R. *The Journal of Chemical Physics* **1969**, *51*, 1182.