

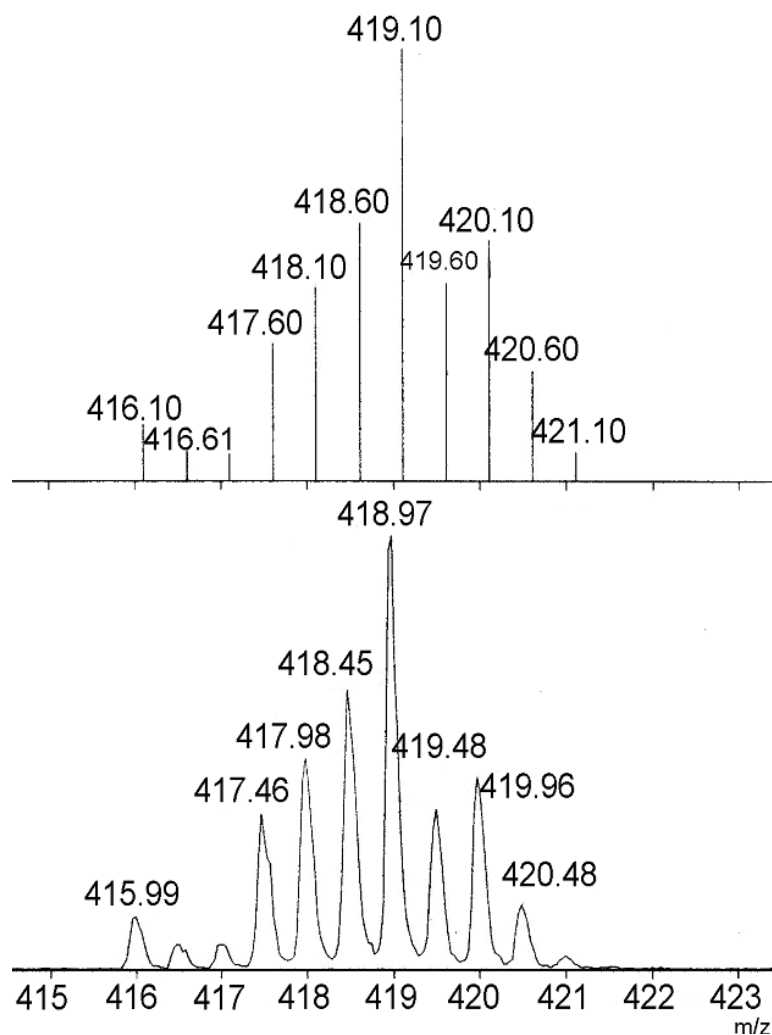
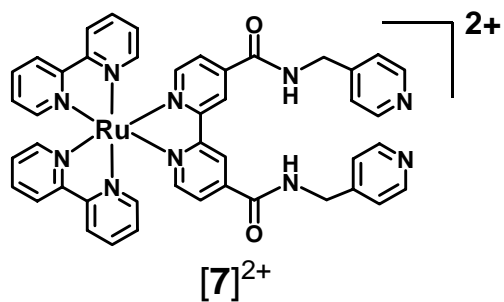
## Supporting Information

### **Syntheses, Characterization, and Photo-Hydrogen-Evolving Properties of Tris(2,2'-bipyridine)ruthenium(II) Derivatives Tethered to a *cis*-Pt(II)Cl<sub>2</sub> Unit: Insights into the Structure-Activity Relationship**

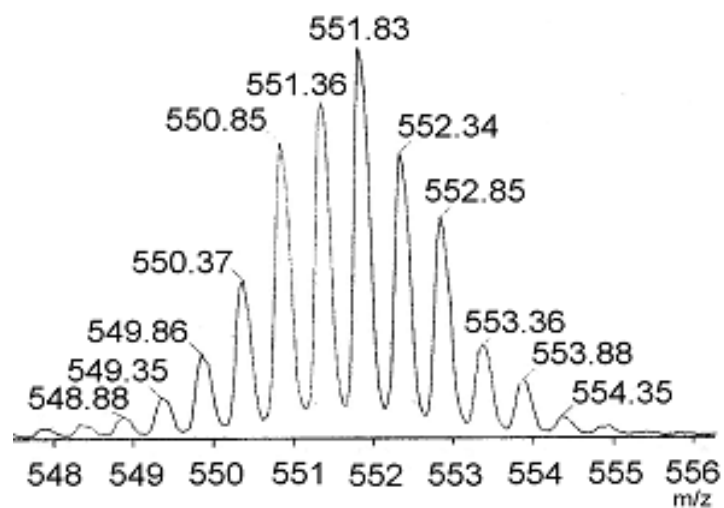
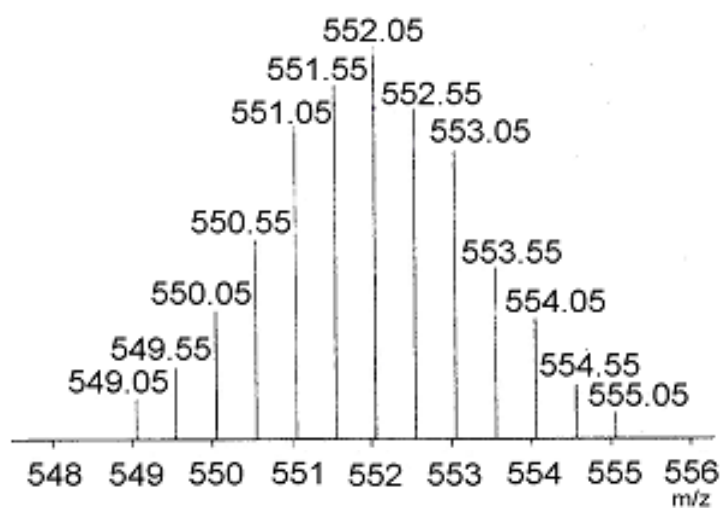
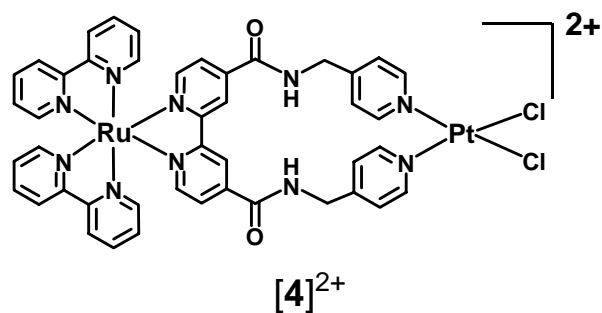
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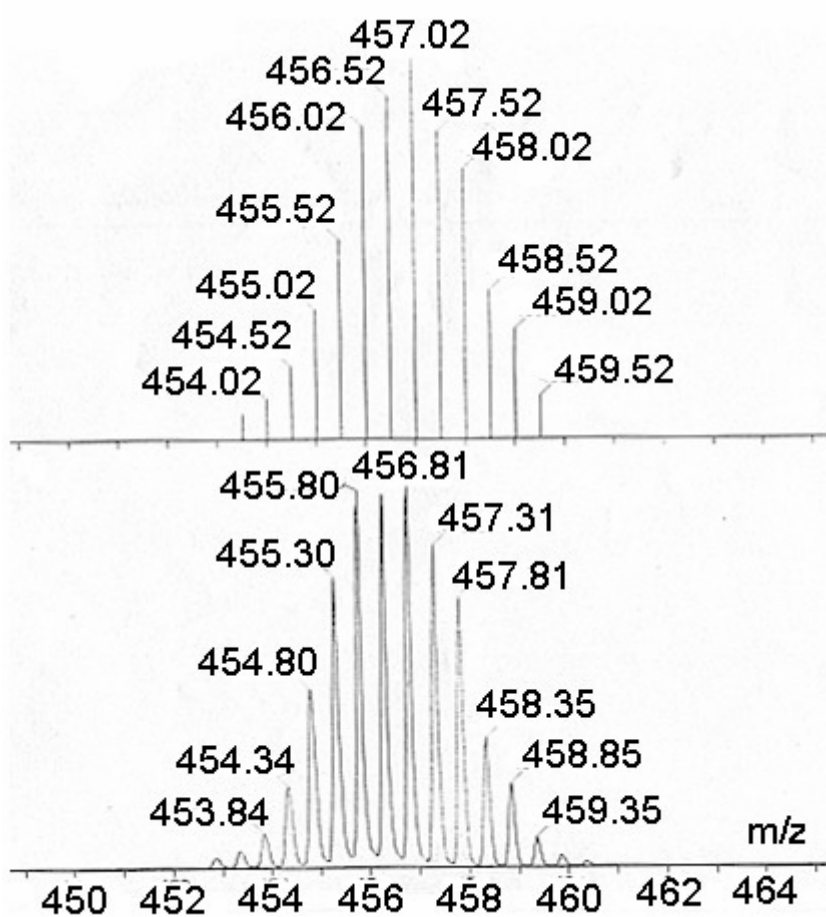
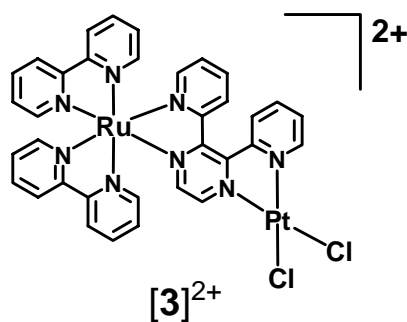
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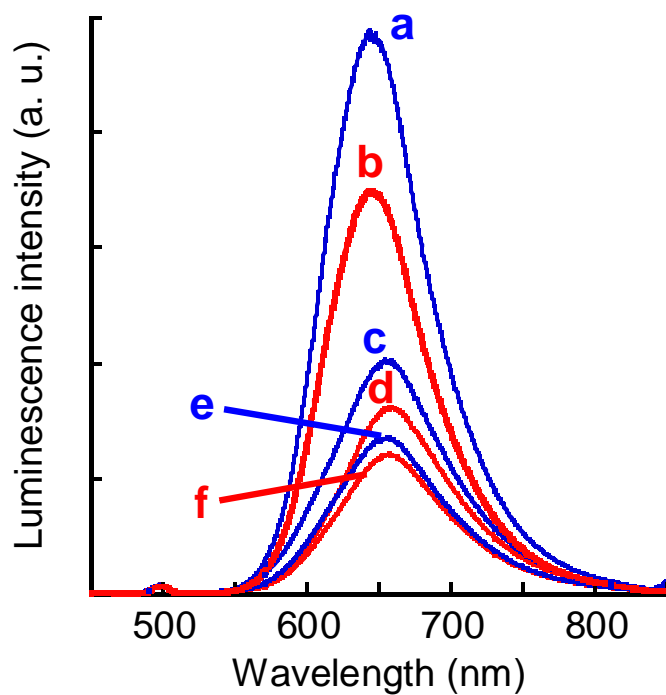
**Figure S1.** The observed (bottom) and calculated (top) positive-ion ESI-TOF mass spectra obtained for a solution of  $[7](PF_6)_2 \cdot 3H_2O$  in  $CH_3CN$  (Micromass LCT), in which a dicationic ion  $[7]^{2+}$  (419.10 m/z) is detected.



**Figure S2.** The observed (bottom) and calculated (top) positive-ion ESI-TOF mass spectra obtained for a solution of  $[4](PF_6)_2 \cdot 3H_2O$  in  $CH_3CN$  (Micromass LCT), in which a dicationic ion  $[4]^{2+}$  (552.05 m/z) is detected.



**Figure S3.** The observed (bottom) and calculated (top) positive-ion ESI-TOF mass spectra obtained for a solution of [3](PF<sub>6</sub>)<sub>2</sub> in CH<sub>3</sub>CN (Micromass LCT), in which a dicationic ion [3]<sup>2+</sup> (457.02 m/z) is detected.



**Figure S4.** Luminescence spectra of  $[5](PF_6)_2 \cdot H_2O$  in Ar (a) and in air (b),  $[7]Cl_2 \cdot 2H_2O$  in Ar (c) and in air (d), and  $[4](NO_3)_2 \cdot H_2O$  in Ar (e) and in air (f) in  $H_2O$  at 20 °C. The excited wavelength was fixed at  $425 \pm 2.5$  nm. All the solutions were prepared to have an equal absorbance at 425 nm (absorbance was 0.1).