

Supporting Information

Coherent Vibrational Wavepacket Dynamics in Platinum(II) Dimers and Their Implications

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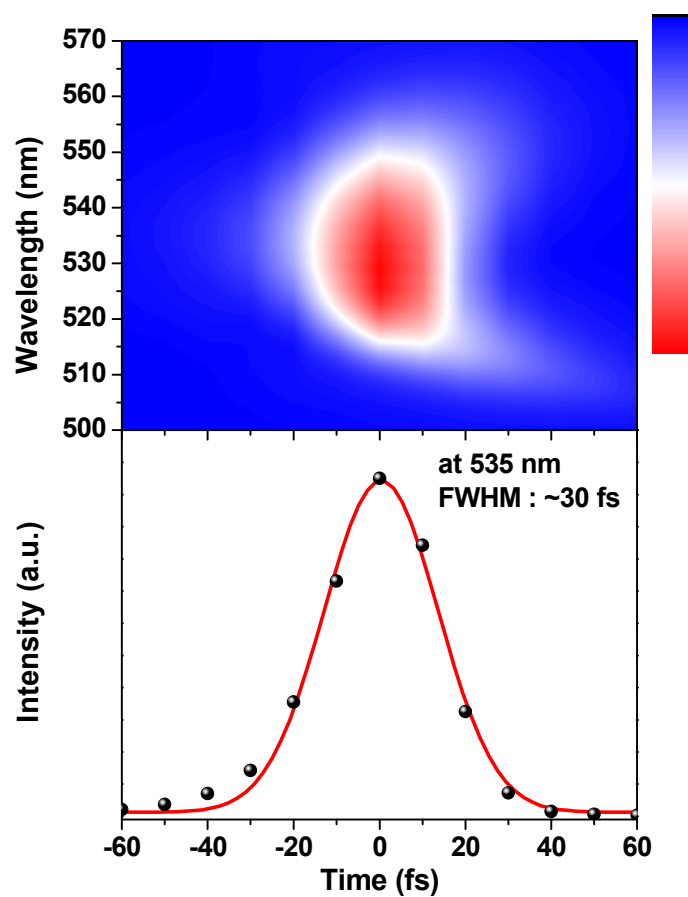


Figure S1. (Top) A contour plot of the transient grating signal of the optimally compressed pulses used in all TA measurements. (Bottom) The intensity profile probed at 535 nm.

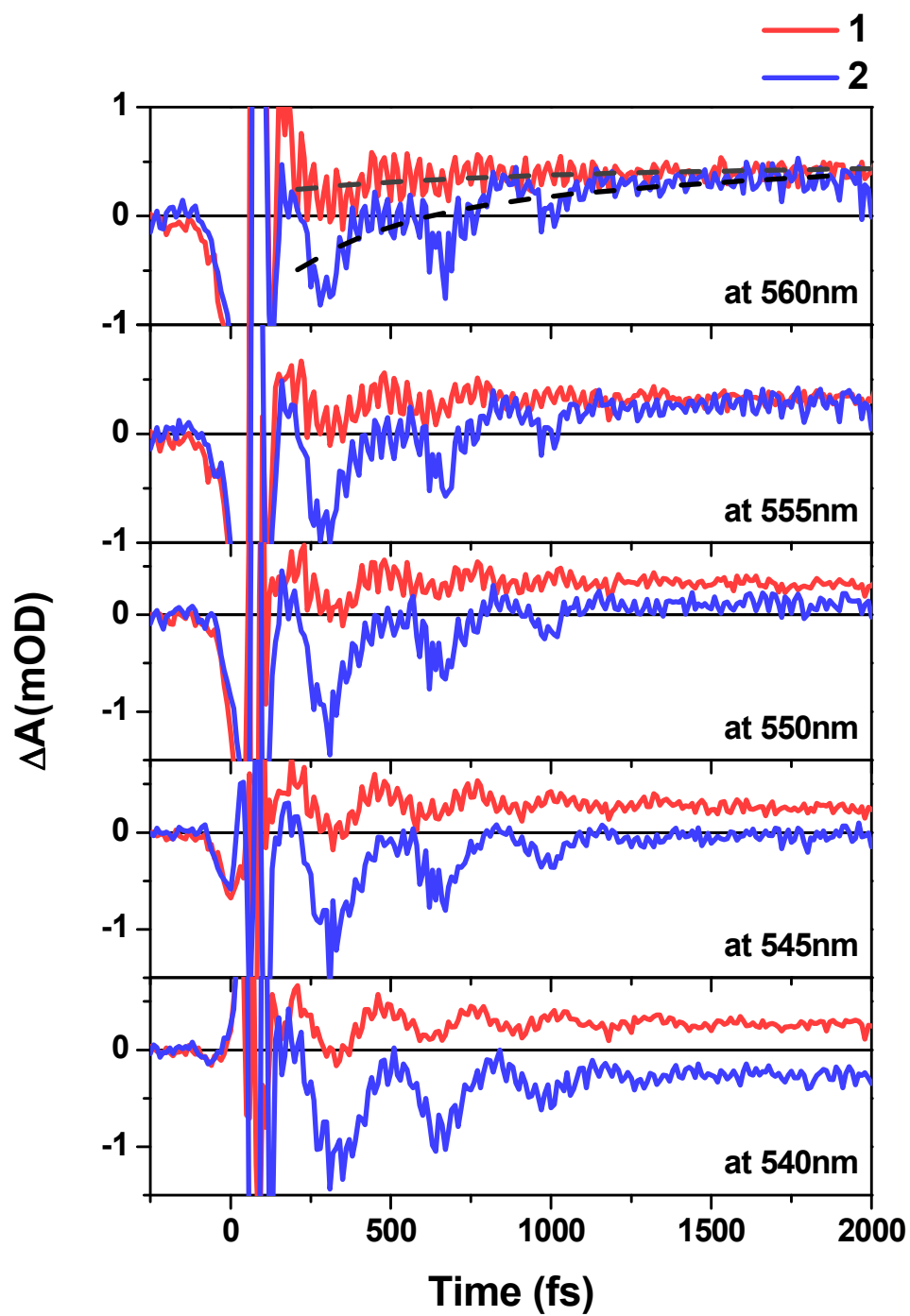


Figure S2. Magic angle TA kinetics traces at 540 ~ 560 nm for **1** (red) and **2** (blue) in THF at room temperature. The fit curves are only included in the data at 560 nm.

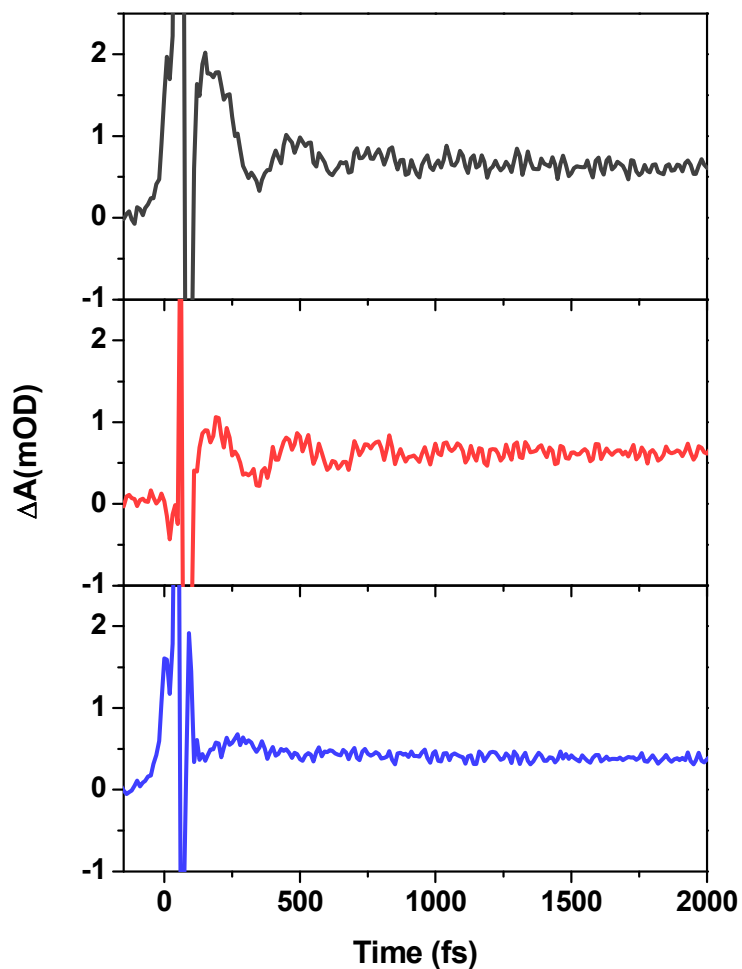


Figure S3. (Top) Magic angle TA kinetics trace of **1**. (middle) reconstructed magic angle TA trace of **1** from the equation $I(t) = (I_{||}(t) + 2I_{\perp}(t)) / 3$. (bottom) magic angle TA kinetics of **1** reconstructed from the sign-reversed $I_{||}(t)$ in the aforementioned equation.

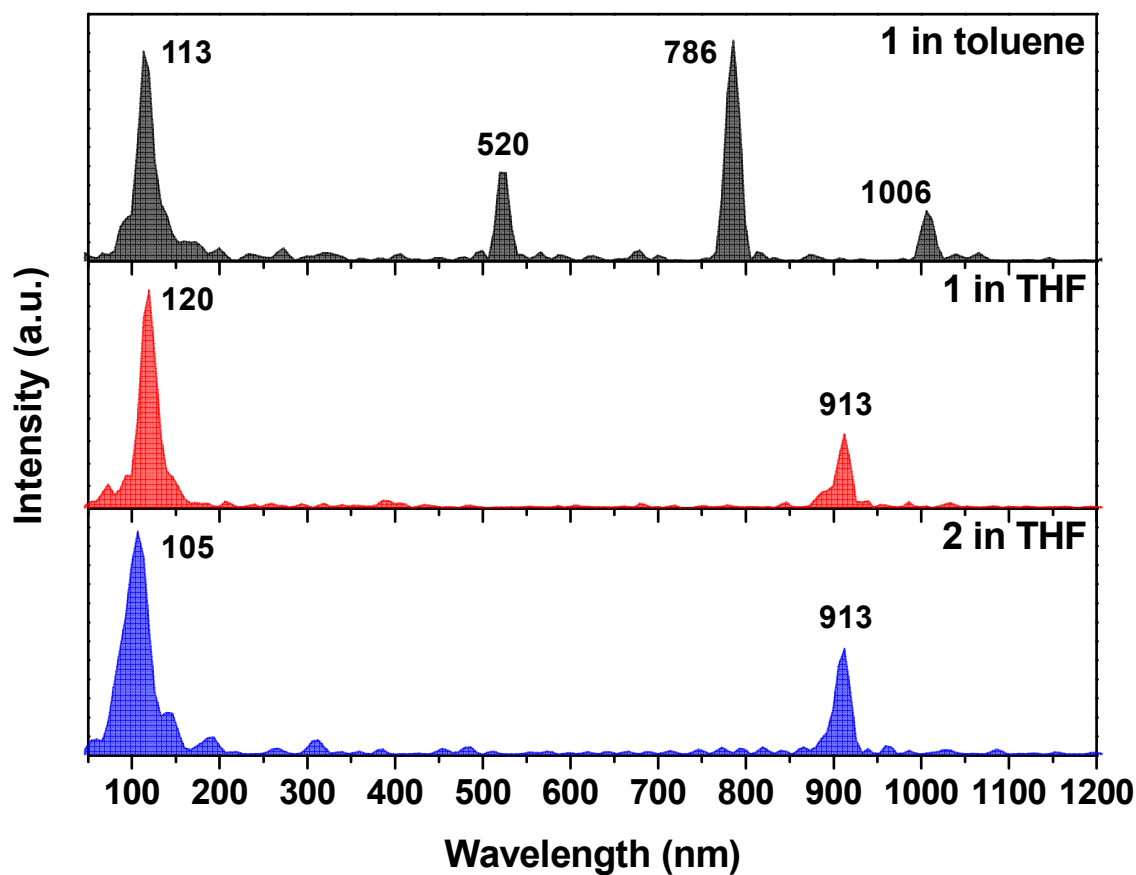


Figure S4. Fourier power spectra below 1200 cm^{-1} at 530 nm . The vibrational modes at 913 cm^{-1} in THF and 520 , 786 and 1006 cm^{-1} in toluene indicate the vibrations of the solvents.

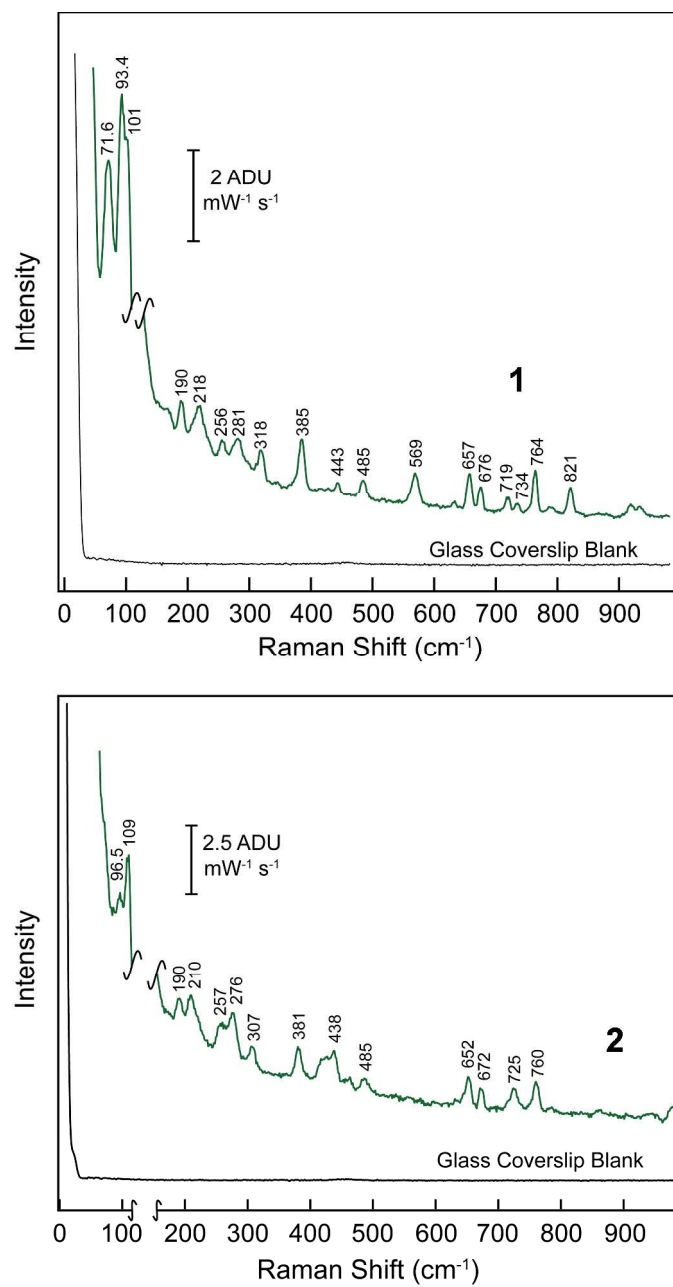


Figure S5. Solid powder Raman spectra for **1** and **2** with 800 nm excitation.