Ultrafast Dynamics of Excited Electronic States in Nitrobenzene
Measured by Ultrafast Transient Polarization Spectroscopy:
Supporting Information

Richard Thurston,1 Matthew M. Brister,1 Liang Z. Tan,2 Elio G. Champenois,1,3 Said Bakhti,1 Pavan Muddukrishna,1 Thorsten Weber,1 Ali Belkacem,1 Daniel S. Slaughter,1,* and Niranjan Shivaram1,4,†

1Chemical Sciences Division, Lawrence Berkeley National Laboratory, Berkeley, CA 94720, United States
2Molecular Foundry, Lawrence Berkeley National Laboratory, Berkeley, CA 94720, United States
3Graduate Group in Applied Science and Technology, University of California Berkeley, Berkeley, CA 94720, United States
4Current address: Department of Physics and Astronomy, Purdue University, West Lafayette, IN 47907, United States

Abstract
This Supporting Information provides details about the curve fitting analysis of the UTPS data.
Curve fitting:

The convolution shown in equation 5 in the manuscript can be written as

\[
I_{sig}(\tau; T) = A_0 + A(T) \exp\left[-\frac{(\tau - t_0(T))}{\gamma(T)} + \frac{1}{2}\left(\frac{\sigma}{\gamma(T)}\right)^2\right] \text{erfc}\left[\frac{1}{\sqrt{2\sigma}}\left(\frac{\sigma^2}{\gamma(T)} + t_0(T) - \tau\right)\right]
\]

(S1)

where we have added an offset parameter \(A_0\) and \(\text{erfc}\) is the complementary error function. This equation is used in a curve-fitting procedure with \(\sigma = 30\) fs, which is obtained from the cross correlation measurement of the pulses using second harmonic generation.

Figure S1 shows two representative lineouts of the UTPS data shown in figure 2(a) of the manuscript and the corresponding fits of equation S1 for \(T \approx 0\) fs and \(T \approx 200\) fs.

FIG. S1. Representative fits for two lineouts of the UTPS data shown in figure 2(a) of the manuscript. The lineouts are taken at \(T \approx 0\) fs and \(T \approx 200\) fs.

Figure S1 shows two representative lineouts of the UTPS data shown in figure 2(a) of the manuscript and the corresponding fits of equation S1 for \(T \approx 0\) fs and \(T \approx 200\) fs.

* dsslaughter@lbl.gov
† niranjan@purdue.edu