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# Supplementary Information

## Transient optical absorption as a powerful tool for engineering of lead tungstate scintillators towards faster response

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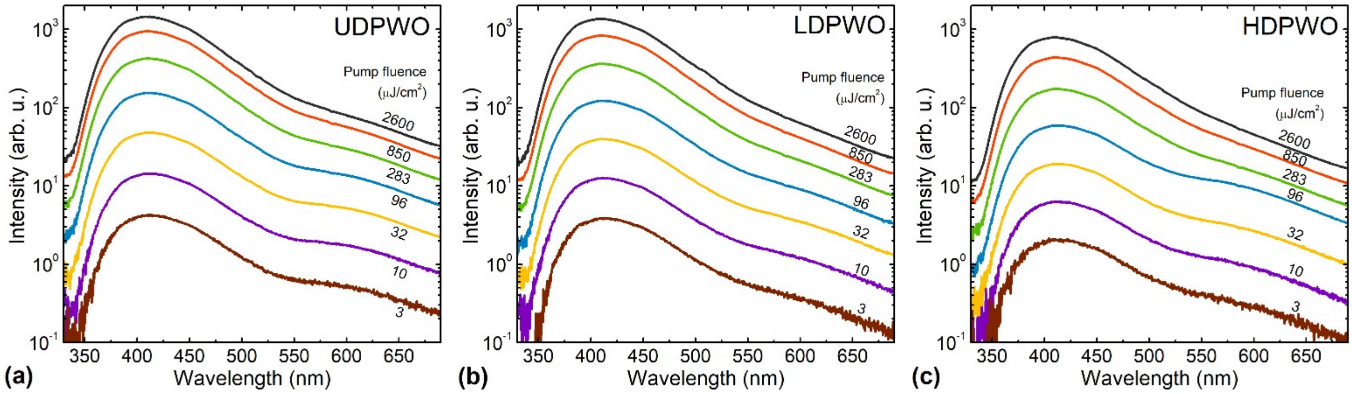


**Fig. S1** Room-temperature photoluminescence spectra at different excitation fluences (indicated) for samples UDPWO (a), LDPWO (b), and HDPWO (c).

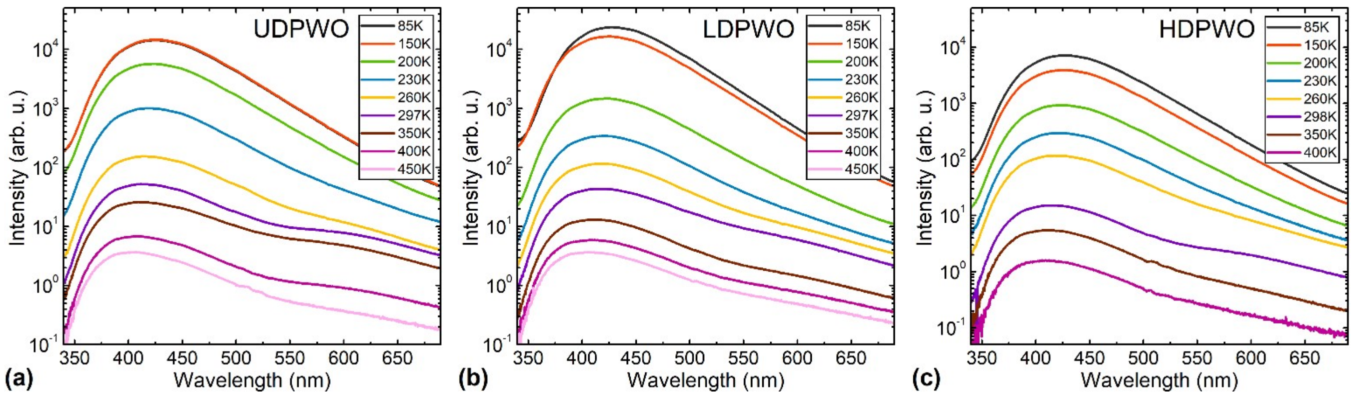


**Fig. S2** Photoluminescence spectra of samples UDPWO (a), LDPWO (b), and HDPWO (c) at different temperatures (indicated).

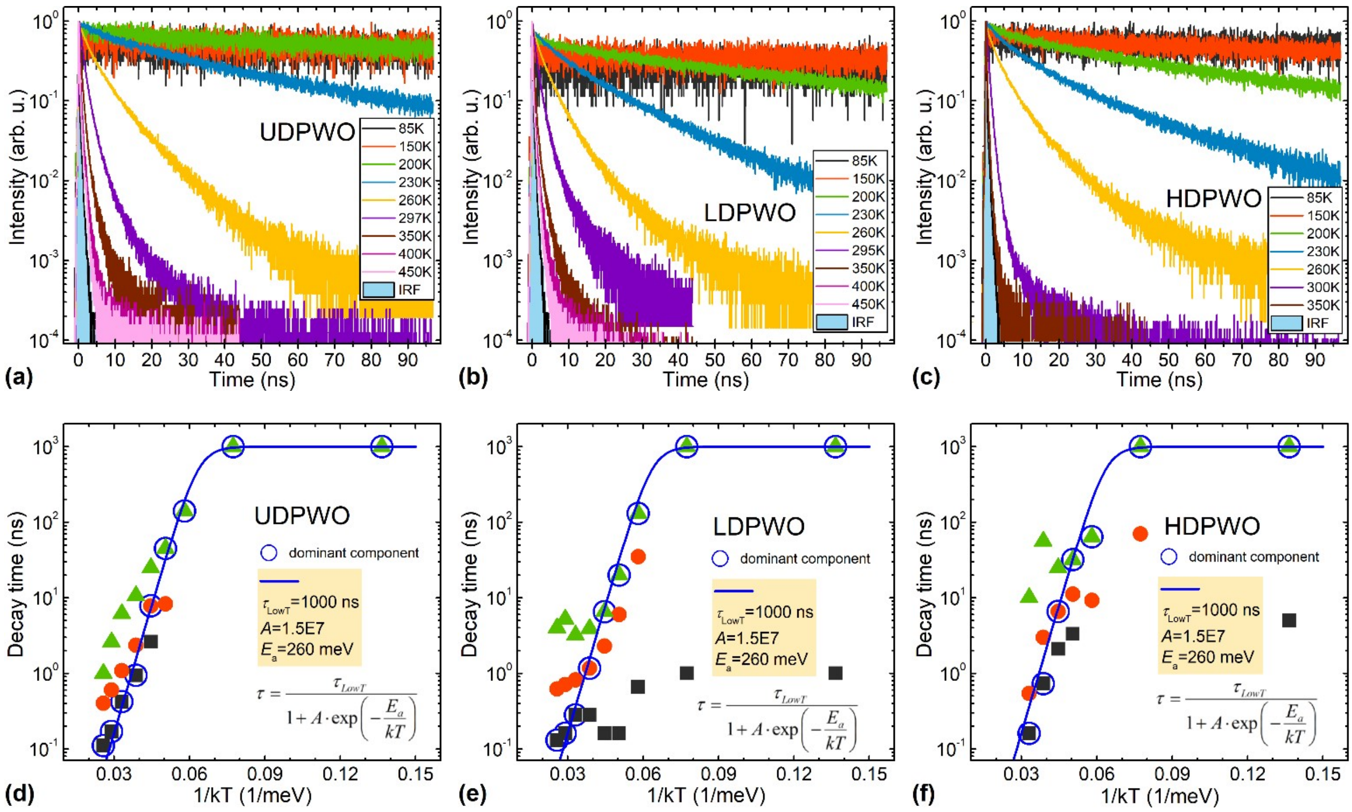


**Fig. S3** Normalized photoluminescence kinetics of samples UDPWO (a), LDPWO (b), and HDPWO (c) at different temperatures (indicated) and photoluminesce decay time constants (fast, medium, and slow) obtained from the multi-exponential fit of photoluminescence kinetics for the same samples UDPWO (d), LDPWO (e), and HDPWO (f). The decay time of the highest-intensity component at each temperature is indicated by a blue circle. The blue line represents a fit by Arrhenius equation using the parameters indicated in the plot legend.