

# Time-Resolved X-Ray Excited Optical Luminescence

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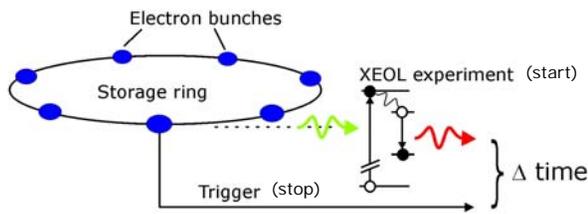
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## Time Gated X-Ray Excited Optical Luminescence:

Electrons in the storage ring are distributed in bunches. Gap between bunches:

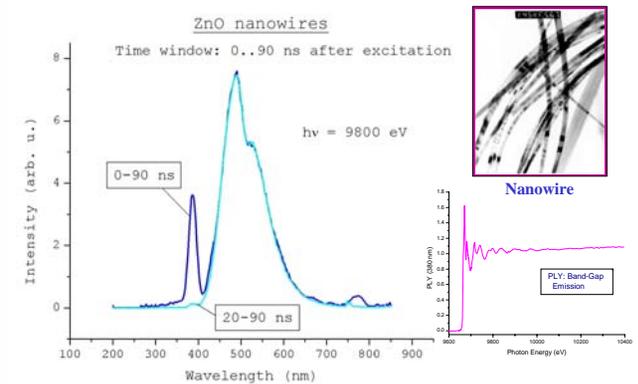
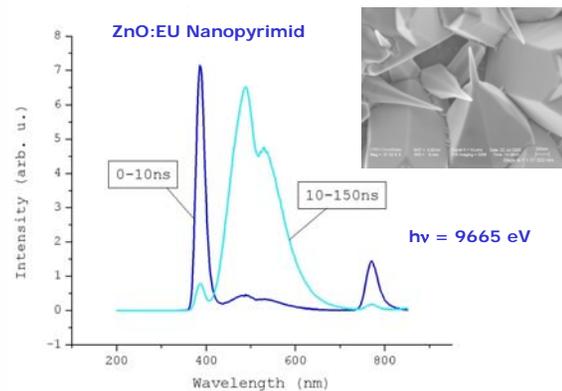
- SRC: 20 ns (15 bunches), 300 ns (1 bunch)
- APS: 153 ns (24 bunches, top-up)

Bunch width 100 to 300 ps. The time structure of APS in the top-up mode provides an ideal setting for time resolved -XEOL<sup>1</sup>

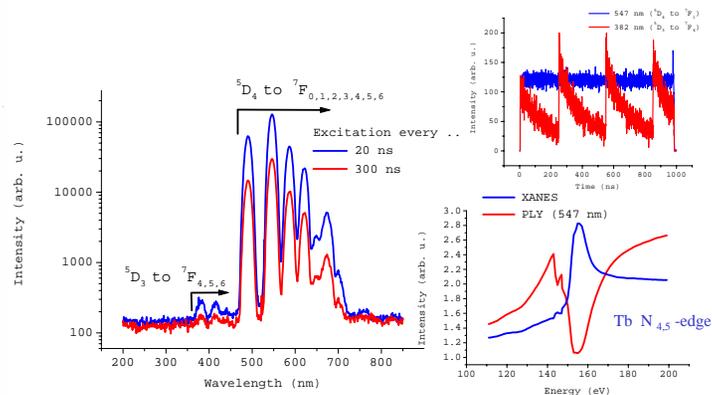


## Nanoflashes from Nanopyramides & Nanowires of ZnO

Excitation every 153 ns; Fast optical transitions from the band gap; Slow transitions from defect states

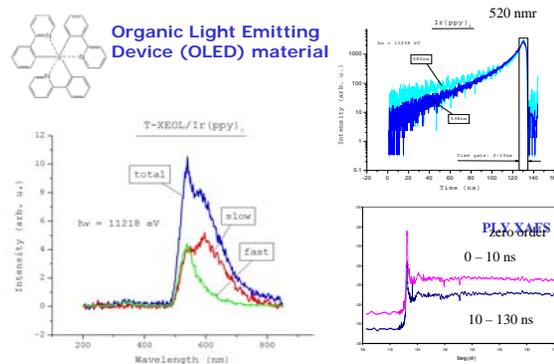


## Rare Earth Giant Resonance TbCl<sub>3</sub> giant absorption at the 4d-4f threshold (Coster-Kronig type).



## OLED Traffic Light:

Excited by a 100 ps, 11218 eV light pulse every 153 ns  
 Green light is emitted first followed by red  
 Slower decay at longer wavelengths



## Reference:

[1] R.A. Rosenberg et. al. APPL. Phys. Lett. 86, 236115 (2005).

## Acknowledgement:

We acknowledge Richard Rosenberg for help and technical advice, as well the following funding agencies and institutions:

