

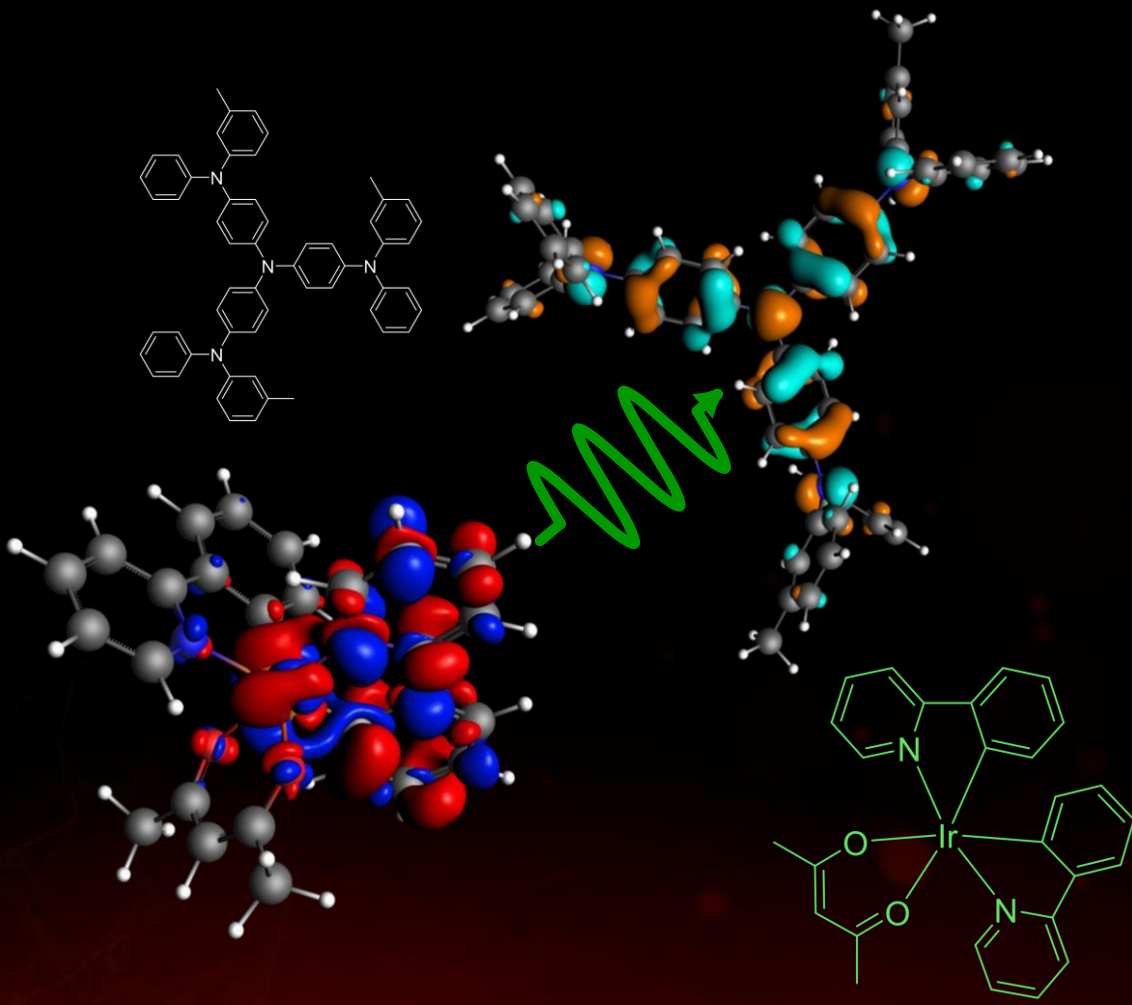
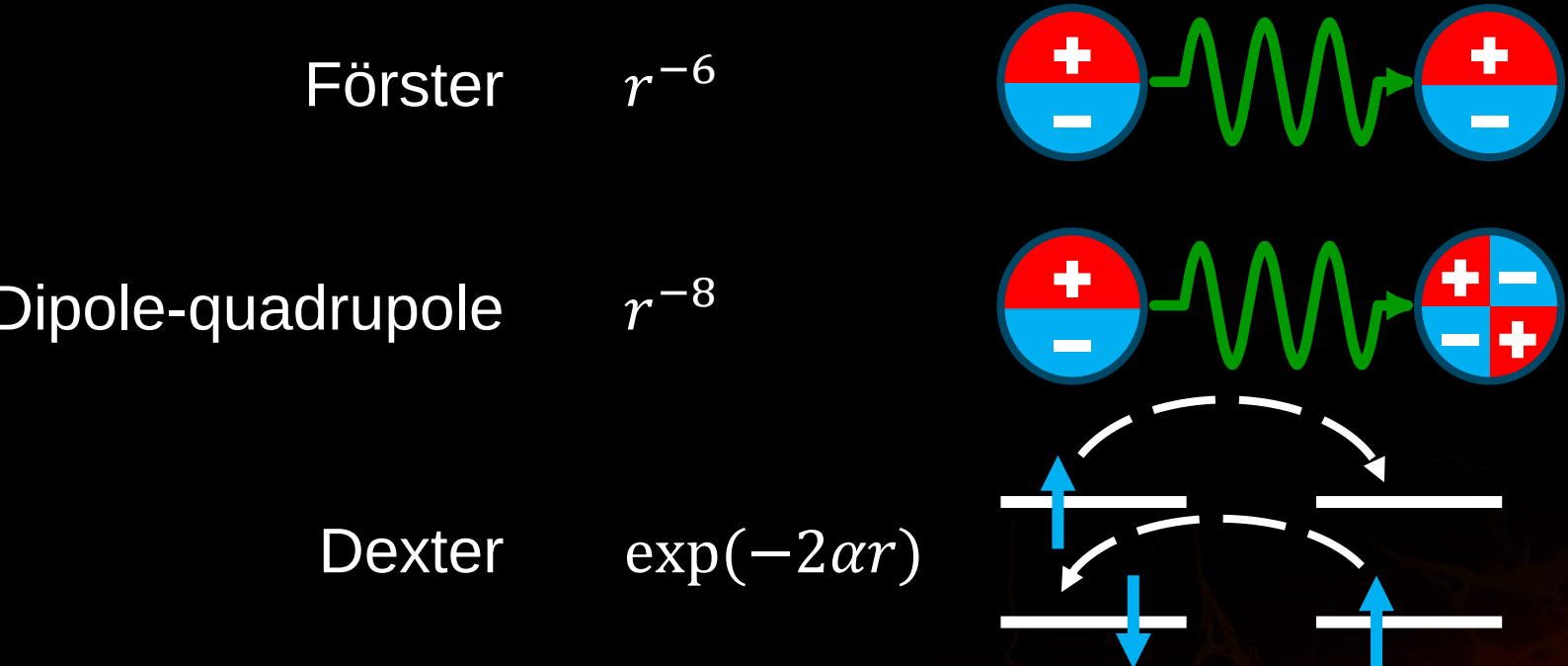
Integrated study of the efficiency roll-off due to triplet-polaron quenching in OLEDs

Hiroki Tomita^{1*}, Clint van Hoesel¹, Christ H. L. Weijtens¹, Peter A. Bobbert¹, Reinder Coehoorn¹

¹ Eindhoven University of Technology; Groene Loper 3, 5612 AE Eindhoven, The Netherlands

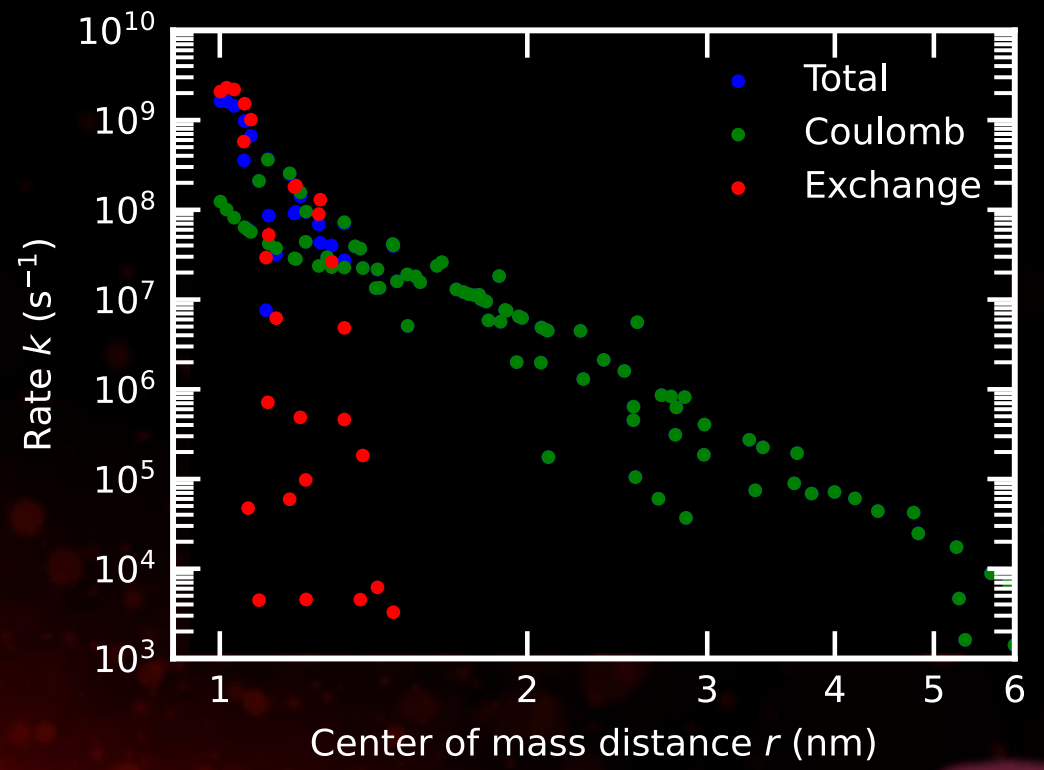
* h.tomita@tue.nl

Interaction types



Quantum Chemistry calculations

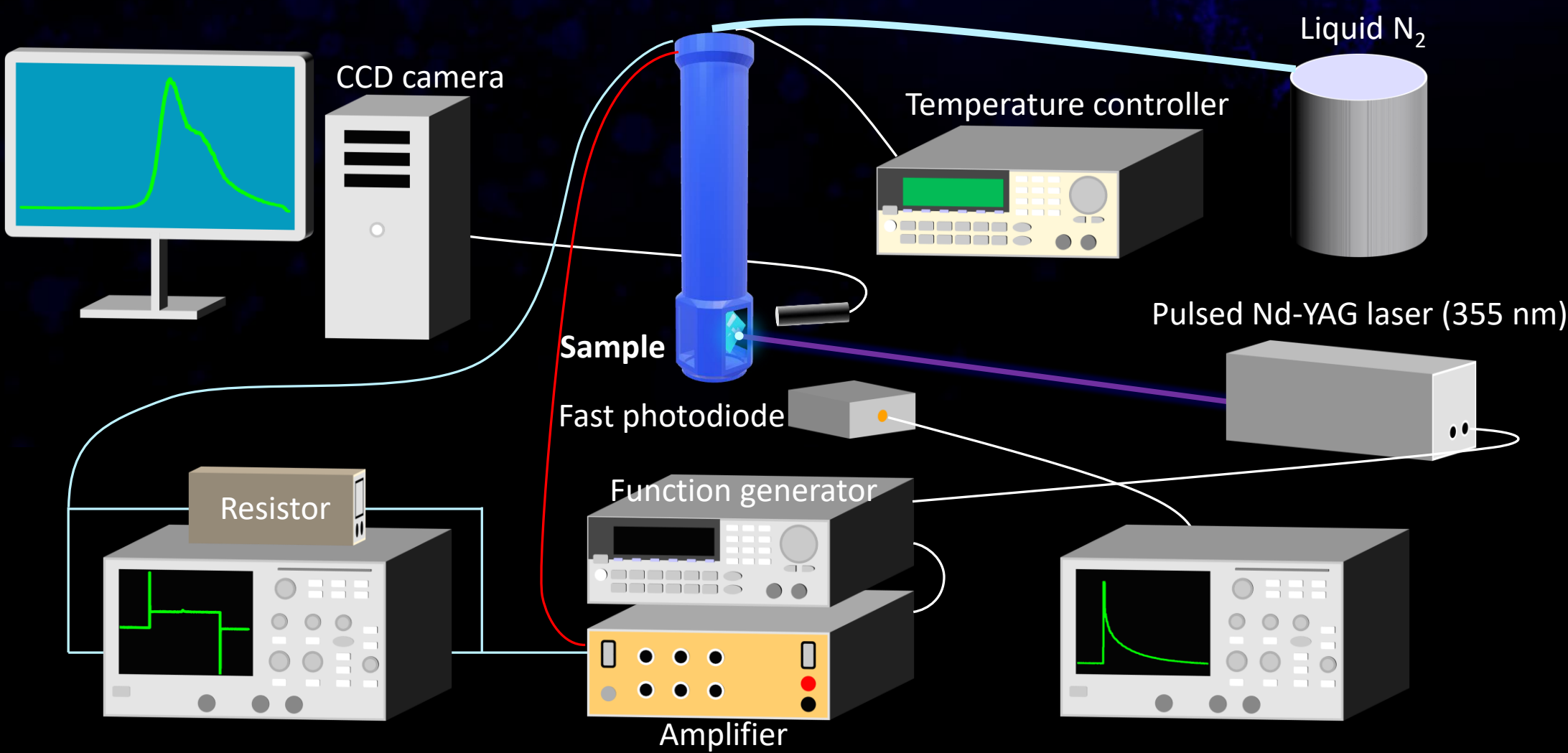
- Energy levels: E_i
- Excitonic states: S_A/D_D
- Interaction rates: k_p



Theory

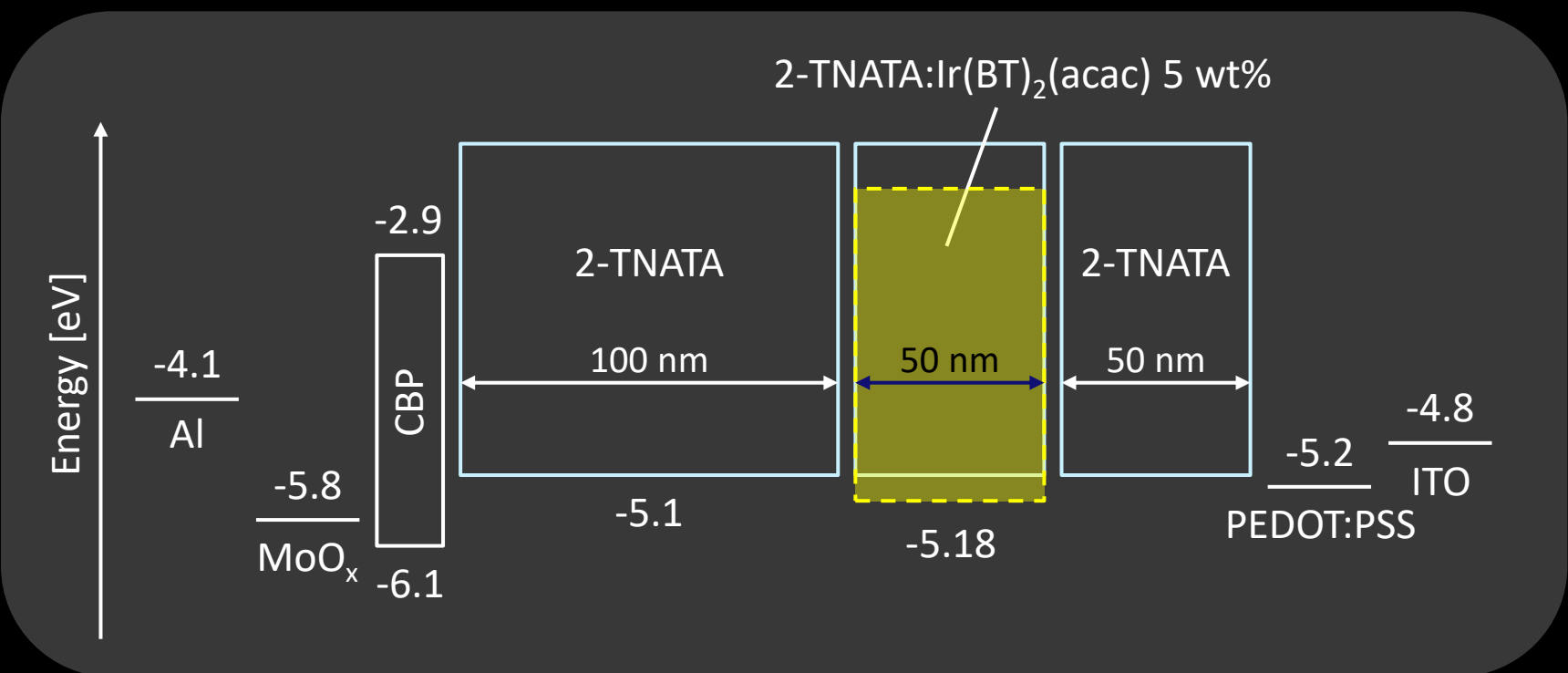
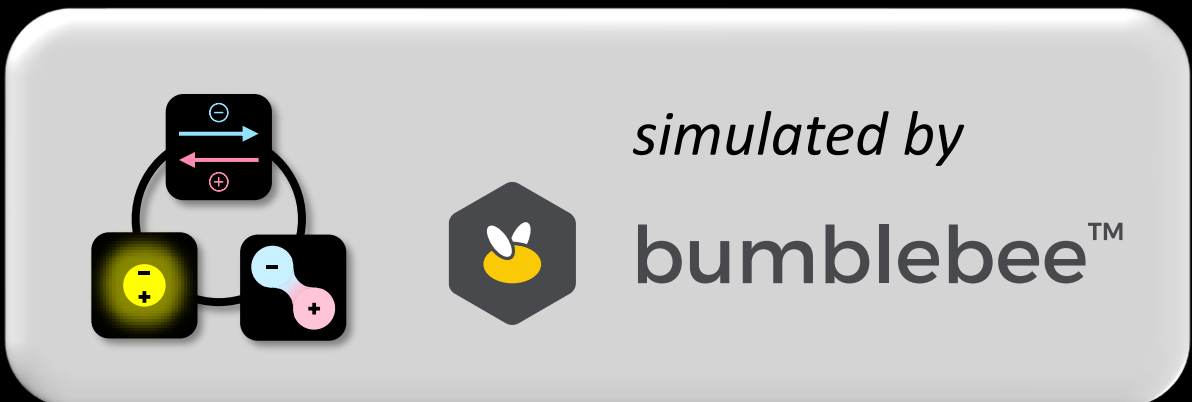
Experiment

Measurement setup



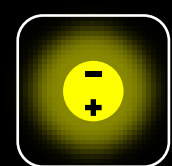
Charge-transport model

- Disorder energy: σ
- Wavefunction decay length: λ
- Nearest neighbor hopping rate: v_1



Steady & transient PL

- PL efficiency: $\eta_{PL}(J)$
 - Decay lifetime: $\tau(J)$
- $\Rightarrow R_F(TPQ)$



Field-induced dissociation

