

## Components for Optical Computers in Pico-Technology (OET)

- Operating frequency 500 THz = 500 000 000 MHz
- Crossing of information paths without interference
- Dimensions of components < 1 nm = 0.000 000 001 m

→ Compare alternant current for conventional computing

Handling of radiation is difficult (50 Hz)

Handling of energy transfer is well established

→  $\lambda = 6\,000\text{ km}$  ←



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Components < 1  $\mu\text{m}$



→ Optical computer with high integration

Conventional optical computing

Limited by the wavelength of light  
 0.5  $\mu\text{m} = 0.000\,000\,5\text{ m}$



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Energy transfer systems

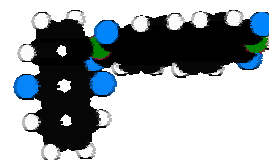
Limited by the Förster radius  
 3 nm = 0.000 000 003 m  
 Nano-technology



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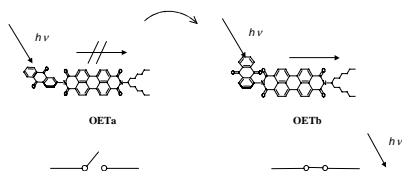
**Novel: Oriented Energy Transfer**

Integration until molecular scale  
**500 pm = 0.000 000 000 5 m**  
 Molecular devices (pico-technology)

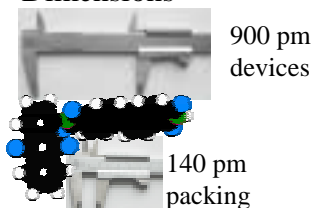


→ Oriented Energy Transfer (OET)

Mechanism



Dimensions



**Performance**

- $\Phi = 100\%$  (energy economy)
- $\varepsilon = 90\,000$  (efficiency)
- $T > 550^\circ\text{C}$  (thermal persistency)
- No fading observed (long-term stability)
- No toxicity (friendly materials)