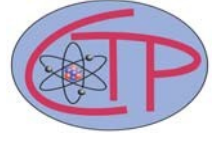




*NEW YORK CITY COLLEGE OF TECHNOLOGY*  
**Physics Department**  
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# **Anomalous Darkening of Luminescence from Indirect Excitons in Coupled Quantum Wells**

*Presented by:*

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**Thursday March 3 at 1:15 pm**  
**Namm, Room 823**

## **Abstract**

In coupled parallel quantum wells, spatially indirect excitons can be made with electrons in one well and holes in the adjacent well. This gives very long lifetimes for the excitons, up to 40 microseconds. These excitons act as a gas that moves through the solid, and can be held in a stress-induced, in-plane harmonic potential trap and reach equilibrium with the lattice. At high stress, we observe an anomalous reduction of the luminescence intensity from the excitons, by around a factor of three, at high density and low temperature. This occurs in the parameter regime where one expects Bose condensation of excitons, but the effect is at least partially related to the effects of the stress to cause band mixing. I will present that current status of theoretical attempts to explain this dramatic effect.

*Light refreshments will be served.*