# Temperature dependent Raman spectroscopy of ZnO nanowires

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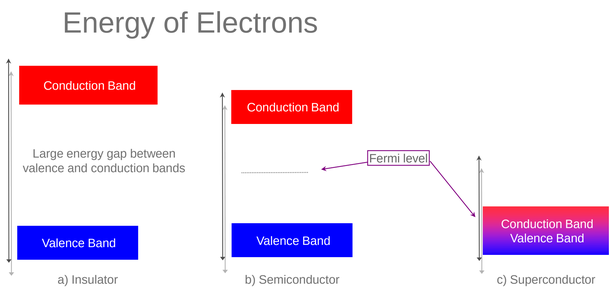
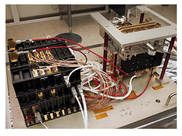
## Introduction



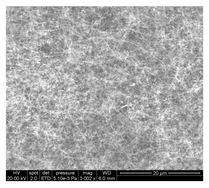

## Promising Applications

a) 

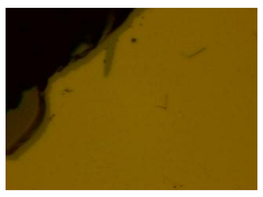
b) 


c) 

■ZnO nanowires have regained popularity due to their potential in areas such as (a) LED lighting (b) transparent electronics and (c) UV optoelectronics.

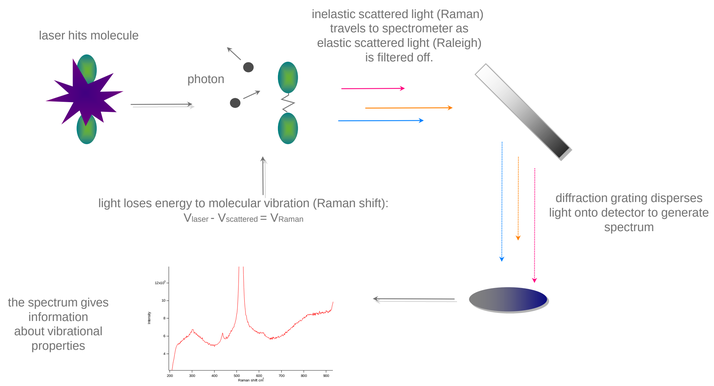


■ZnO nanowires grown on silicon oxide/silicon substrate



■80nm single ZnO wires on gold/silicon substrate

## Raman Spectroscopy



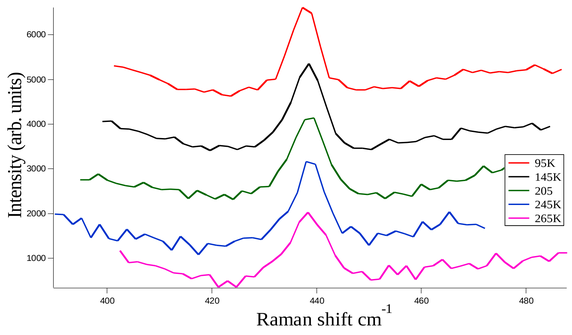

a) 

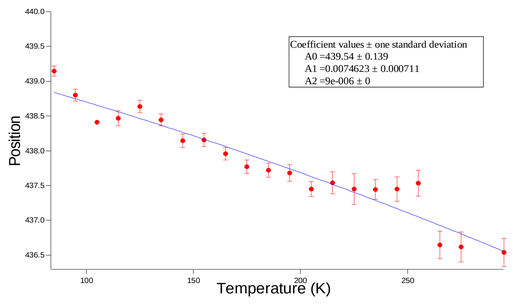

b) 

c) 

■Raman spectroscopy was conducted by (a) a Raman microscope in (b) a vacuumed chamber cooled via (c) a liquid nitrogen dewar.

## Experimental Results




Curve fitting was done using the formula:
$\omega = \omega_0 - \alpha_1 T - \alpha_2 T^2$

## Future Work

■ Single wire Raman spectroscopy of ZnO.

■ Thermal characteristics and its effects on molecular vibrations.