Prof. Chin-Cheng Chen (陳進成授)

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Research Interests

Education:

Ph.D. Johns Hopkins University 1980-1985

M.S National Cheng Kung University 1977-1979

B.S. National Cheng Kung University 1973-1977

Research field:

Nucleation; Photochemistry; Laser Application; Air Pollution Control; Thin Film Technology.

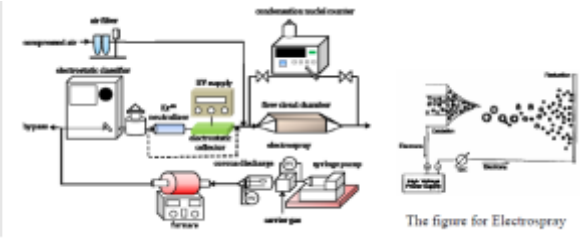
Office :

Chemical Engineering Building Room 93A22

Representative Publications

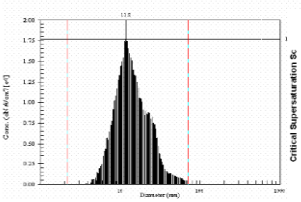
I.Nucleation

A. The phenomena nucleation of vapor on charged/neutral nanoparticle

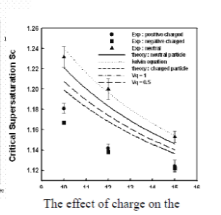


The figure for Electrospray

B. Results:



The size distribution of nanoparticle by the electrospray system.



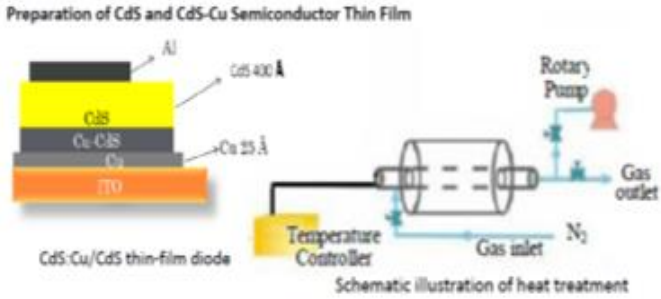
The effect of charge on the supersaturation required for the heterogeneous nucleation of water on SiO_2 nanoparticles

C. Publications:

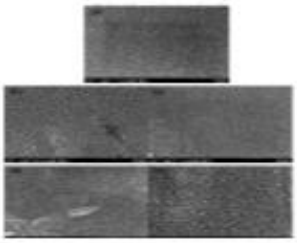
1. Chin-Cheng Chen*;Hsiu-Chin Chen，"Effects of Charge and Size on Condensation of Supersaturated Water vapor on Nanoparticles of SiO2"，Journal of Chemical Physics，(2007)
2. Chen;Jadran Vrabec;Hans Hasse，"Thermal Properties of the Metastable Supersaturated Vapor of the Lennard-Jones Fluid"，Journal of Chemical Physics;，(2005)

II.Light emitting semiconducting thin flim

A. Preparation of CdS and CdS-Cu semiconductor Thin Film



B. Results:



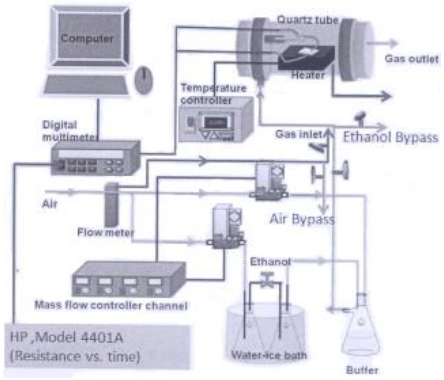
SEM images of CdS thin film at fixed heat treatment temperature for: (a)as-prepared (b)30min (c)60min (d)90min (e)120min

C. Publication:

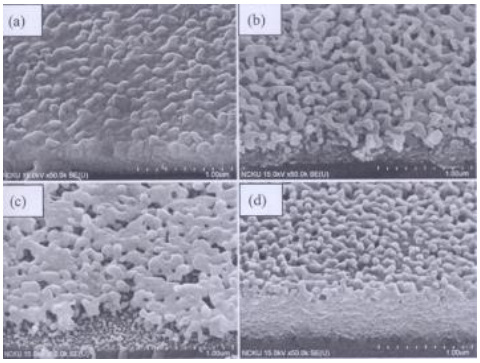
1. Jing -Wen Chen*;Chin-Cheng Chen，"Preparation of CdS(Cu) / CdS Light-Emitting Diode by Thermal Evaporation and Co-evaporation Method"，2009 56th Taiwan Institute of Chemical Engineers Annual Conference;，(2009)

IIISemiconductor thin film gas sensor

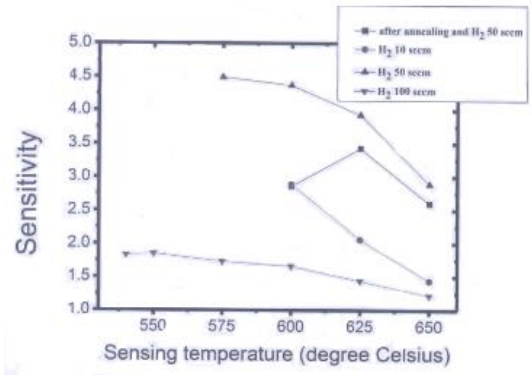
A. Thermal evaporation system:



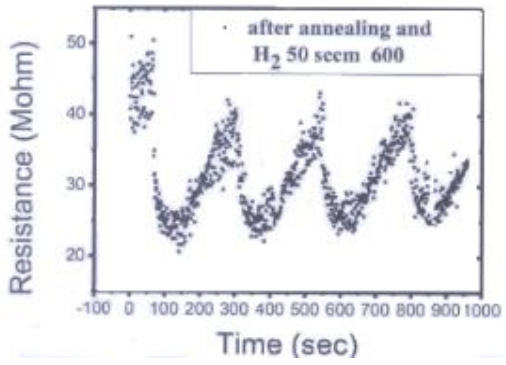
B. Results



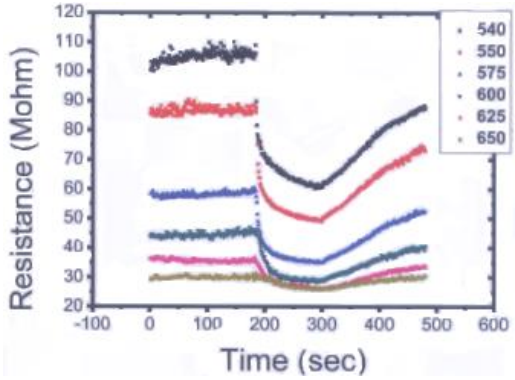
SEM micrographs of Ga_2O_3-CeO_2 thin film under different hydrogen concentration



The sensitivity of Ga_2O_3-CeO_2 thin film by co-sputtering method and then treated under different hydrogen concentration conditions



The stability of Ga_2O_3-CeO_2 thin film by co-sputtering method and then treated under different hydrogen concentration conditions



The result of sensing experiment at different sensing temperature for Ga_2O_3-CeO_2 thin film

C. Publications:

1. Shuo-Yu Chen*;Chin-Cheng Chen,"Effect of carbon film and gallium film on the gas sensing characteristics of Ga2O3 thin film gas sensor prepared by rheotaxial growth and thermal oxidation",2010 13th Asia Pacific Confederation of Chemical Engineering Congress, Taipei, Taiwan, Oct. 5-8.;(2010)
2. Chin-Cheng Chen*;Chiu-Chen Chen，"Morphology and Electrical Properties of Pure and Ti doped Gas-sensitive Ga2O3 Film Prepared by Rheotaxial Growth and Thermal Oxidation"，Journal of Materials Research;，vol19, no4, pp1105-1117(2004)