

City University of Hong Kong
Department of Electrical Engineering
Presents a Seminar on

Neutron transmutation doping of isotope enriched ZnO nanorods to produce p-type material

by

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Date : **3 July 2019** (Wednesday)
Time : **11:00 am – 12:00 nn**
Venue: **YEUNG P4302**
Purple Zone, Floor 4
City University of Hong Kong

Abstract

We report on neutron transmutation doping (NTD) of isotopically (^{64}Zn) enriched ZnO nanorods to produce p- type material. Nanorods of ZnO enriched with ^{64}Zn were grown. The natural abundance of ^{64}Zn in ZnO is ~49 % and this was increased to ~71 %. The enriched material was irradiated with thermal neutrons which converts some ^{64}Zn -> ^{65}Zn . The ^{65}Zn decays to ^{65}Cu with a half-life of 244 days. Cu can act as an acceptor dopant. After 690 days, a hot probe technique was used to determine the majority charge carriers in samples. The non-irradiated samples were measured to be n-type and the irradiated samples were measured to be p-type.

Biography

Professor Ironside has over 30 years experience in semiconductor optoelectronics research and in particular microfabrication of semiconductor photonic components such as laser diodes for optical communications systems, optical sensing and optical metrology systems. He has published over 120 research journal publications and 200 conference papers and has won awards for transferring research knowledge for commercial exploitation. He recently joined (June 2014) the department of imaging and applied physics at Curtin University.

http://www.semiconductor-today.com/news_items/2012/NOV/CSTG_221112.html
<https://staffportal.curtin.edu.au/staff/profile/view/Charlie.Ironside>

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