

# Curriculum Vitae

## **Dae-Sung Park**

Nationality: South Korea

Date of Birth: December 12, 1980

Marital Status: Single

Profession: Ph. D. Candidate 1<sup>st</sup>

Present Address: Advanced Materials and Nano-Engineering Lab. (AMNEL)

Department of Physics, Faculty of Science & Arts

Najran University

Al-Araisa, P. O Box 1988, Najran, 11001

Kingdom of Saudi Arabia (KSA)

Tel: (+966) 53-4574597, I.P.: 070-8690-9635

Fax: (+966) 7-5428779

Email: [d.s.park1212@gmail.com](mailto:d.s.park1212@gmail.com)



## **Research Interest**

- ✓ *GaN & ZnO based optoelectronic device*
- ✓ *New transparent conductive oxide (TCO) for the detection of solar-blind region*
- ✓ *Bandgap engineering in oxide materials*
- ✓ *Single-crystalline Si, poly-crystalline Si and Cu(In<sub>x</sub>Ga<sub>1-x</sub>)Se<sub>2</sub> (CIGS) Solar cells*

## **I. Educational Background**

**M.Sc. 2007-2009**

- **Major: Semiconductor**

- **Specialization:** ZnO based light emitting diode (LED) or laser diode (LD), ZnO growth & deposition, transparent conductive oxide (TCO)

- School of Semiconductor and Chemical Engineering, Chonbuk National University, Jeonju, Korea.

- Thesis Title: “**Characteristics of Transparent Conductive ZnO:Ga films prepared by RF magnetron co-sputtering method**” (Supervisor: Prof. Chang-Joo Youn)

**BSc. 2000-2007**

- **Major: Physics**

- **Specialization:** Solid physics

Department of physics, Suncheon National University, Suncheon, Korea.

## **II. Technical proficiency**

- Preparation of crystalline or polycrystalline films by molecular beam epitaxy (MBE), hybrid beam deposition (HBD) and RF & DC magnetron sputtering system.
- Fabrication of light emitting diodes (LEDs) or optoelectronic devices : Photolithography, device etching process, Metallization.

- Installation and operation of photoelectronic characterization systems and I-V measurement system.
- Spectroscopy: Photocurrent density, I-V curve Mass spectroscopy, FT-IR spectroscopy, Field Emission-Scanning electron microscopy (FE-SEM), Transmission electron microscopy (TEM), X-ray diffraction (XRD), X-ray photoelectron spectroscopy (XPS), Atomic Force Microscopy (AFM), UV-Vis spectroscopy, UV-Vis diffuse reflectance spectroscopy (UV-DRS), Photoluminescence (PL).

### **Computer Skill:**

Windows: MS DOS Microsoft Word, Excel, Power point, Chem Window.

Origin version 6.1 and 7.5

Visual Basics.

Internet resources.

### **III. List of Publications**

#### **International Journal Papers**

1. Jung-Hyun Kim, **Dae-Sung Park**, Ji-Hyun Yu, Teak-Sung Kim, Tae-Su Jeong, Chang-Joo Youn, "Emission mechanism of localized deep levels in BeZnO layers grown by hybrid beam method", Jour. Mater. Sci. 43, No 3, 144–3148 (2008).
2. Jung-Hyun Kim, **Dae-Sung Park**, Ji-Hyun Yu, Tae-Su Jeong, Chang-Joo Youn, "Structural, Electrical and optical properties of epitaxial ZnO layers grown with various O<sub>2</sub> flows by radio-frequency magnetron sputtering", Jour. Korean Phys. Soc. 52, No 6, 1818-1822 (2008).
3. **Dae-Sung Park**, Jung-Hyun Kim, Ji-Hyun Yu, Tae-Su Jeong, Chang-Joo Youn, "Growth of and oxygen-flow influence on ZnO layers grown by using RF magnetron sputtering", Jour. Korean Phys. Soc. 53, No 6, 3250-3254 (2008).
4. Ji-Hyun Yu, **Dae-Sung Park**, Jung-Hyun Kim, Tae-Su Jeong, Chang-Joo Youn, K. J. Hong "Post-growth annealing and wide bandgap modulation of BeZnO layers grown by RF co-sputtering of ZnO and Be targets", Jour. Mater. Sci. DOI 10.1007 (2009).
5. Jung-Hyun Kim, **Dae-Sung Park**, Tae-Su Jeong, Ji-Hyun Yu, Chang-Joo Youn, "Bandgap modulation of BeZnO layers grown by hybrid plasma-assisted molecular-beam epitaxy/electron-beam deposition", Jour. Korean Phys. Soc. 2009 (to be submitted).
6. **Dae-Sung Park**, Jung-Hyun Kim, Ji-Hyun Yu, Tae-Su Jeong, Chang-Joo Youn, "Be<sub>x</sub>Zn<sub>1-x</sub>O Epitaxial Film Synthesis Using RF Magnetron Co-Sputtering", Jour. Mater. Sci. 2009 (in press).

### **VI. Scientific meeting and conferences Attended**

#### **Meetings and conferences**

1. Jung-Hyun Kim, **Dae-Sung Park**, Ji-Hyun Yu, Tae-Su Jeong, Chang-Joo Youn "Temperature dependence of localized deep-level emissions in BeZnO layers grown by hybrid beam method" ICDS 2007, Albuquerque, New Mexico, USA, 22-27 July 2007.

2. **Dae-Sung Park**, Jung-Hyun Kim, Ji-Hyun Yu, Tae-Su Jeong, Chang-Joo Youn “Characterization of the intrinsic p-type ZnO by sputtering with controlling the oxygen partial pressure” The Korean Physical Society spring meeting 2007, Jeju, Korea, October 18-19, 2007.
3. Jung-Hyun Kim, **Dae-Sung Park**, Ji-Hyun Yu, Tae-Su Jeong, Chang-Joo Youn “Temperature dependence of localized deep-level emissions in BeZnO layers grown by hybrid beam method”, The 14<sup>th</sup> Korean Conference on Semiconductors, Korea, 21-23 February, 2008.
4. **Dae-Sung Park**, Jung-Hyun Kim, Ji-Hyun Yu, Tae-Su Jeong, Chang-Joo Youn “Structural and optical properties of Be<sub>x</sub>Zn<sub>1-x</sub>O film grown by reactive RF sputtering” ISPSA 2008, Jeju, Korea, August 25-28, 2008.
5. Tae-Su Jeong, Jung-Hyun Kim, **Dae-Sung Park**, Ji-Hyun Yu, Chang-Joo Youn “Bandgap tuning of BeZnO layers grown by hybrid plasma-assisted molecular beam epitaxy/electron-beam deposition”, The 15<sup>th</sup> International Conference on MBE, Vancouver, Canada, August 3-8, 2008.
6. **Dae-Sung Park**, Jung-Hyun Kim, Ji-Hyun Yu, Tae-Su Jeong, Chang-Joo Youn “Preparation and improvement of Be<sub>x</sub>Zn<sub>1-x</sub>O films” The Korean Physical Society fall meeting 2008, Gwangju, Korea, October 24-25, 2008.
7. **Dae-Sung Park**, Jung-Hyun Kim, Ji-Hyun Yu, Tae-Su Jeong, Chang-Joo Youn “Influence of substrate temperature on the properties of BeZnO alloy films” The Korean Physical Society spring meeting 2009, Daejeon, Korea, April 23-24, 2009.
8. Nan-ju Mun, **Dae-sung Park**, Mira Jeong, Myungil Jeong, Cheljong Choi “Formation of Thermally Stable Er-Germanide with W Capping Layer” The Korean Physical Society spring meeting 2009, Daejeon, Korea, April 23-24, 2009.
9. **Dae-Sung Park**, Jung-Hyun Kim, Ji-Hyun Yu, Tae-Su Jeong, Chang-Joo Youn “Band gap engineering based on Be<sub>x</sub>Zn<sub>1-x</sub>O ternary alloy films prepared by RF magnetron co-sputtering” The 5<sup>th</sup> International Conference on Materials for Advanced Technologies, Singapore, June 28-July 3, 2009.

## References:

1. **Professor Ali Ahmed Al-Hajry**  
Vice president, Department of Physics, Faculty of Science, Centre for Advanced Materials and Nano-Engineering (CAMNE), Najran University, Kingdom of Saudi Arabia (KSA)  
Email: [ahajry@gmail.com](mailto:ahajry@gmail.com)  
Tel: (+966) 75-428777  
Fax: (+966) 7-5428779
2. **Professor Ahmad Umar**  
Department of Chemistry, Faculty of Science, Centre for Advanced Materials and Nano-Engineering (CAMNE), Najran University, Kingdom of Saudi Arabia (KSA)  
Email: [ahmadumar786@gmail.com](mailto:ahmadumar786@gmail.com), [aspsams@gmail.com](mailto:aspsams@gmail.com)  
Tel: (+966) 53-4574597  
Fax: (+966) 7-5428779
3. **Professor Chang-Joo Youn**

School of Semiconductor and Chemical Engineering, Chonbuk National University,  
Republic of Korea  
Email: [cjyoun@chonbuk.ac.kr](mailto:cjyoun@chonbuk.ac.kr)  
Tel: (+82) 63-270-3651  
Fax: (+82) 63-270-4492

I, hereby, declare that all the information given by me is true to the best of my  
knowledge.

(Dae-Sung Park)