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■ EDUCATION

- 2001.8 – 2006.8 **Ph.D. Chemical Engineering, University of Florida**
Thesis title: "Study of Reaction Pathways and Kinetics in Cu(In,Ga)Se₂ Thin Film Growth". (Advisor: Dr. Tim Anderson)
- 1994.3 – 1996.2 **M.S. Chemical Engineering, Seoul National University, South Korea**
Thesis title: "A Study on the Phase Behavior in Thermally Induced Phase Separation (TIPS) Process". (Advisor: Dr. Kookheon Char)
- 1990.3 – 1994.2 **B.S. Chemical Engineering, SungKyunKwan University, South Korea**
(GPA: 4.31/4.5, Summa Cum Laude)

■ RESEARCH EXPERTISE

- **Cu(InGa)(SeS)₂ Thin Film Photovoltaics** (2001 ~ present)
 - Cu(In,Ga)Se₂ thin film growth by molecular beam epitaxy (MBE)
 - Cu(In,Ga)(Se,S)₂ thin film growth on glass and flexible substrates by selenization (H₂Se) and/or sulfurization (H₂S) of metallic precursor.
 - Reaction pathways and kinetics of Cu(In,Ga)Se₂ synthesis
: Co-evaporation, selenization/sulfurization and rapid thermal processing
 - Post-deposition thermal and laser annealing of photovoltaic absorber
 - Photovoltaic device modeling (AMPS-1D/MEDICI)
 - Phase diagram assessment of Cu-In-Ga-Se subsystems (Thermo-Calc)
- **Semiconductor Material and Device Characterization:**
 - SEM/EDS (Scanning Electron Microscope: JEOL JSM 6400 and others)
 - FESEM (Field Emission SEM: JEOL JSM-6335F)
 - XRD (X-ray Diffraction: Philips APD 3720 and others)
 - HTXRD (High-temperature XRD: Scintag and Philips PANalytical X'Pert)
 - GIXRD (Glancing-Incidence XRD: Rigaku D/Max 2200)
 - FIB (Focused Ion Beam: Strata DB 235)
 - ICP-OES (Inductively Coupled Plasma-Optical Emission Microscopy:
Perkin-Elmer Plasma 3200 ICP)
 - XPS (X-ray Photoelectron Spectroscopy)
 - CV/DLTS (Deep Level Transient Spectroscopy)
: Doping density and defect characterization of semiconductor device
 - Photo I-V Measurement: Photovoltaic device efficiency

■ PROFESSIONAL EXPERIENCES

2008.2 - Present *Limited Term Researcher*

Institute of Energy Conversion, University of Delaware, USA

- Cu(In,Ga)(Se,S)₂ thin film photovoltaic absorber synthesis by selenization (H₂Se) and/or sulfurization (H₂S) of metallic precursor.
- Flexible Cu(In,Ga)Se₂ cells
- Post-deposition thermal and laser annealing of CuInSe₂-based photovoltaic absorber

2006.8 – 2008.2 *Postdoctoral Associate*

Electronic Material Processing Group (Advisor: Prof. Tim Anderson)

Department of Chemical Engineering, University of Florida, USA

- Development of high rate Cu(InGa)Se₂ photovoltaic absorber synthesis process
- Investigation of crystal grain growth mechanism in CuInSe₂-based thin film and nanopowder

2006.10 – 2007.1 *Consultant*

JPK Consulting, Wellesley, MA 02481

- Project title: “Nanotechnology manufacturing process”

2001.8 – 2006.8 *Research Assistant*

Electronic Material Processing Group (Prof. Tim Anderson)

Department of Chemical Engineering, University of Florida, USA

- Cu(InGa)Se₂ thin film solar cells
- Reaction pathway and kinetics of Cu(InGa)Se₂ formation
- Thermodynamic optimization of Cu-In-Ga-Se sub-systems (ThermoCalc)
- Diffusion modeling (DICTRA)
- Photovoltaic device modeling (MEDICI)
- Deep Level Transient Spectroscopy (DLTS) system setup and deep level defect study

2002 – 2008 *Authorized Facility User*

High Temperature Materials Laboratory User Program

Oak Ridge National Laboratory (ORNL), Oak Ridge, TN, USA.

- Project title: Identification of high rate pathways for the synthesis of Cu(In,Ga)Se₂ absorbers (2007-2008).
- Project title: *In situ* investigation on the reaction kinetics and pathways of Cu(In,Ga)Se₂ formation from various precursor structures (2005–2007).
- Project title: *In-situ* study on the reaction mechanism and kinetics of CuInSe₂ formation from various bilayer precursors using time-resolved high temperature XRD (2002-2005).

- 2004 – 2005 ***SURA/ORNL Summer Cooperative Program Awardee***
 Performed 3 month research project twice at Oak Ridge National Laboratory (ORNL) supported by Southeastern Universities Research Association (SURA)
- Project title: “Investigation of Reaction Pathways and Kinetics for Cu(In_xGa_{1-x})Se₂ Solar Cell Absorber Layer Formation from Selenization of Metallic Precursors” (2005).
 - Project title: “Investigation of Reaction Pathways and Kinetics for Solar Cell Absorber Layers of Cu(In_xGa_{1-x})Se₂” (2004).
- 2006 ***Teaching Assistant***
 Department of Chemical Engineering, University of Florida, USA
- Course: Process Thermodynamics (Spring 2006)
 - Lecturer: Prof. Dmitry I. Kopelevich
- 2003 ***Teaching Assistant***
 Department of Chemical Engineering, University of Florida, USA
- Course: Materials of Chemical Engineering (Fall 2003),
 - Lecturer: Prof. Dinesh O. Shah
- 1996.2 – 2001.6 ***Senior Engineer***
 Polymerization Process Development Team
 R&D Center, Samsung Total Petrochemicals, Co. Ltd., South Korea
- Polyolefin (PE/PP) polymerization process development
 → US patent No. 6897274 B2 (May 24, 2005):
 “Prepolymerization Method of α -Olefin”
 - Development of real-time soft sensor to predict MI and density of PE/PP
 → US Patent No. 7024313 B2 (April 4, 2006):
 “Method of Estimating the Properties of A Polymer Product”
 - Pilot test and commercial scale-up of new polymerization catalysts and products
 - On-line analyzer development (GC, IMR, etc.)
- 1994 – 1995 ***Student Researcher***
 Polymer Membrane Laboratory
 Korea Institute of Science and Technology (KIST), South Korea
- Polymer blending (Nylon’s-PEG): Melt and solution blending
 - *In situ* observation of phase separation using optical microscope equipped with hot stage, CCD camera, image analyzer, etc.
- 1994 ***Teaching Assistant***
 Department of Chemical Engineering, Seoul National University, South Korea
- Course: Engineering Mathematics
 - Lecturer: Prof. Kookheon Char

■ AWARDS and HONORS

- 2005 Korean Graduate Student Research Award, Korean Student Scholarship and Loan Fund at University of Florida (Presented by president of U. Florida)
- 2005 Travel grant, College of Engineering, University of Florida
- 2005 Graduate Student Council Travel Award, University of Florida
- 2004 Best poster award at 14th International Conference on Ternary and Multinary Compounds (ICTMC)
- 2004 - 2005 SURA/ORNL summer cooperative research program award
- 2002 - 2004 Outstanding academic accomplishment, University of Florida
- 2000 MVP award, R&D center of Samsung Total Petrochemicals, Co. Ltd, South Korea
- 1994 - 1995 Scholarship from SAMSUNG
- 1994 Honor for graduation with the highest GPA (4.31/4.5), College of Engineering, SungKyunKwan University, South Korea
- 1993 Scholarship from Korean Institute of Chemical Engineers (KIChE)
- 1992 Scholarship from Woo-Jung Foundation
- 1990 - 1991 Scholarship for Excellent Academic Record, SungKyunKwan University, Korea

■ PUBLICATIONS

JOURNAL PAPERS

1. F. Zheng, J.Y. Shen, Y.Q. Liu, **W.K. Kim**, M.Y. Chu, M. Ider, X.H. Bao, and T.J. Anderson, "Thermodynamic Optimization of the Ga-Se System", *CALPHAD* 32 (2008) 432.
2. **W.K. Kim**, E.A. Payzant, S. Kim, S.A. Speakman, O.D. Crisalle and T.J. Anderson, "Reaction kinetics of CuGaSe₂ formation from a GaSe/CuSe bilayer precursor film", *J. Cryst. Growth* 310 (2008) 2987.
3. **W.K. Kim**, E.A. Payzant, T.J. Anderson and O.D. Crisalle, "In-situ investigation of the selenization kinetics of Cu-Ga precursors using time-resolved, high temperature X-ray diffraction", *Thin Solid Films* 515 (2007) 5837.
4. J. Shen, **W.K. Kim**, S. Shang, M. Chu, S. Cao and T.J. Anderson, "Thermodynamic Description of the ternary compounds in the Cu-In-Se System", *Rare Metals* 25(5) (2006) 481.
5. **W.K. Kim**, E.A. Payzant, S. Yoon and T.J. Anderson, "In-situ investigation on selenization kinetics of Cu-In precursor using time-resolved, high temperature x-ray diffraction", *J. Cryst. Growth* 294 (2006) 231.
6. X. Wang, S.S. Li, **W.K. Kim**, S. Yoon, V. Craciun, J.M. Howard, S. Easwaran, O. Manasreh, O.D. Crisalle and T.J. Anderson, "Investigation of Rapid Thermal Annealing on Cu(In,Ga)Se₂ Films and Solar Cells", *Solar Energy Materials and Solar Cells* 90 (2006) 2855.
7. **W.K. Kim**, S. Kim, E.A. Payzant, S.A. Speakman, S. Yoon, R.M. Kaczynski, R.D. Acher, T.J. Anderson, O.D. Crisalle, S.S. Li and V. Craciun, "Reaction Kinetics of α -CuInSe₂ formation from an In₂Se₃/CuSe bilayer precursor film", *J. Phys. Chem. Solids*. 66 (11), (2005) 1915.
8. S. Yoon, S. Kim, V. Craciun, **W.K. Kim**, R. Kaczynski, R. Acher, T.J. Anderson, O.D. Crisalle and S.S. Li, "Effect of a Cu-Se Secondary Phase on the Epitaxial Growth of CuInSe₂ on (100) GaAs.", *J. Cryst. Growth*, 281(2-4) (2005) 209.
9. S. Kim, **W.K. Kim**, E.A. Payzant, R.M. Kaczynski, R.D. Acher, S. Yoon, T.J. Anderson, O.D. Crisalle, and S.S. Li, "Reaction Kinetics of CuInSe₂ thin films grown from bilayer InSe/CuSe precursors", *J. Vac. Sci. Technol. A*, 23(2) (2005) 310.
10. L.L. Kerr, S.S. Li, S. W. Johnston, T.J. Anderson, O.D. Crisalle, **W.K. Kim**, J. Abushama and R.N. Noufi, "Investigation of defect properties in Cu(In,Ga)Se₂ solar cells by deep-level transient spectroscopy.", *Solid-State Electronics*, 48(9) (2004) 1579.
11. **W.K. Kim**, K. Char, C.K. Kim, "Control of Droplet Size of Polymer-Diluent Blends through Thermally Induced Phase Separation", *J. Polym. Sci. Part B*, 38 (2000) 3042.

JOURNAL PAPERS (In preparation)

1. **W.K. Kim**, G.M. Hanket and W.N. Shafarman, "Ga and S homogenization by simultaneous H₂Se/H₂S reaction of Cu-Ga-In precursor" (In preparation)
2. S. Yoon, **W.K. Kim**, R. Kaczynski, R. Acher, T.J. Anderson, O.D. Crisalle, and S.S. Li, "Effect of a Cu-Se Secondary Phase on the Epitaxial Growth of CuGaSe₂ on (100) GaAs" (Manuscript completed)
3. J. Song, S.S. Li, **W.K. Kim**, S. Yoon, T.J. Anderson, and O.D. Crisalle, "Characterization of Cd_{1-x}Zn_xS Thin Films by Chemical Bath Deposition for Buffer Layers of CIGS and CGS Solar Cells" (In preparation).
4. J. Song, S.S. Li, L. Chen, R. Noufi, **W.K. Kim**, T.J. Anderson and O.D. Crisalle, "Investigation of Cd_{1-x}Zn_xS Buffer Layers on the Performance of CIGS and CGS Solar Cells" (In preparation).
5. **W.K. Kim**, E.A. Payzant and T.J. Anderson, "In situ study on selenization kinetics of Cu-Ga-In precursor using time-resolved, high temperature X-ray diffraction" (Manuscript completed).
6. **W.K. Kim**, S. Kim, S. Yoon, T.J. Anderson, O.D. Crisalle and S.S. Li, "Secondary Grain Growth of CuInSe₂ Driven by Thermodynamic Effect of Copper Selenide Phase" (Manuscript completed).
7. **W.K. Kim**, E.A. Payzant and T.J. Anderson, "In situ investigation of phase transformations in binary Cu-Se, In-Se and Ga-Se compounds" (Manuscript in final review).

PEER REVIEWED CONFERENCE PROCEEDINGS

1. G.M. Hanket, R. Kamada, **W.K. Kim** and W.N. Shafarman, "Effect of Reaction Temperature on Cu(InGa)(SeS)₂ Formation by a Sequential H₂Se/H₂S Precursor Reaction Process", *Proceeding of 33rd IEEE Photovoltaic Specialists Conference*, San Diego, CA, May 11-16 (2008).
2. **W.K. Kim**, E.A. Payzant, S.S. Li, O.D. Crisalle and T.J. Anderson, "In-situ Investigation of Selenization of Cu-Ga-In Metallic Precursors." *Proceeding of World Conference on Photovoltaic Energy Conversion (WCPEC-4)*, Waikoloa, Hi (2006) 453.
3. J. Song, S. S. Li, S. Yoon, **W.K. Kim**, J. Kim, J. Chen, V. Craciun, T. J. Anderson, O. D. Crisalle, and F. Ren "Growth and Characterization of Cd_xZn_{1-x}S Thin Film Buffer Layers by Chemical Bath Deposition", *Proceeding of 31st IEEE Photovoltaic Specialists Conference*, Orlando, FL (2005) 449.
4. X. Wang, S.S. Li, **W.K. Kim**, S. Yoon, A. Baran, V. Craciun, T. J. Anderson, O. D. Crisalle and J. Venturini, "Investigation of Pulsed Laser Annealing and Rapid Thermal Annealing of CIGS films and devices", *Proceeding of 31st IEEE Photovoltaic Specialists Conference*, Orlando, FL (2005) 394.
5. S. Yoon, C. Park, T. Komissarova, **W.K. Kim**, T. J. Anderson, R. Ahrenkiel, R. Noufi, O. D. Crisalle, S. S. Li and J. H. Jung, "The effect of Na on the defect structure in CuInSe₂ and CuGaSe₂ grown by molecular beam epitaxy", *Proceeding of 31st IEEE Photovoltaic Specialists Conference*, Orlando, FL (2005) 457.

6. L.L. Kerr, S.S. Li, S.W. Johnston, T.J. Anderson, O.D. Crisalle, **W.K. Kim**, J. Abushama, and R.N. Noufi, "Investigation of Deep-Level Defects in Cu(In,Ga)Se₂ Solar Cells by Deep-Level Transient Spectroscopy", *Proceeding of 19th European Photovoltaic Energy Conversion Conference and Exhibition*, Paris, France, June 7-11 (2004).

PRESENTATIONS

1. **W.K. Kim**, "Diffusion in CIGS Photovoltaics", *2008 NIST Diffusion Workshop*, Gaithersburg, MD, May 12-13 (2008).
2. **W.K. Kim**, E.A. Payzant and T.J. Anderson, "*In situ* Investigation of Reaction Pathways of Cu-Se, In-Se and Ga-Se Mixed and Bilayer Precursors", *MRS Spring meeting*, San Francisco, CA (2007).
3. J.Y. Shen, M.Y. Chu, **W.K. Kim**, M. Ider, C.-H. Chang, B.J. Stanbery and T.J. Anderson, "Thermodynamic Database for the Cu-Ga-In-Se System", *CALPHAD-XXXVI*, State College, PA (2007).
4. J.Y. Shen, Q. Yue, **W.K. Kim**, M.Y. Chu, M. Ider and T.J. Anderson, "Thermodynamic optimization of the quasi-binary CuGaSe₂-CuInSe₂", *CALPHAD-XXXVI*, State College, PA (2007).
5. T. J. Anderson, **W. K. Kim**, S. Kim, S. Yoon, C.H. Chang, J. Shen, and E. A. Payzant, "Routes to formation of CuIn_xGa_{1-x}Se₂ Thin Film Absorbers for photovoltaics", *TMS 2007*, Orlando, FL (2007) - **Invited**.
6. J.Y. Shen, **W.K. Kim**, S.L. Shang, M.Y. Chu, B.X. Hua, C. S. Cao and T.J. Anderson, "Thermodynamic Description of the Cu-In-Se System", *Thermodynamics of Alloys (TOFA 2006)*, Beijing, China (2006).
7. T. J. Anderson, **W. K. Kim**, S. Kim, S. Yoon, C.H. Chang, J. Shen, and E. A. Payzant, "Reaction Pathways and Kinetics of CuIn_xGa_{1-x}Se₂ Thin Film Growth", *E-MRS IUMRS ICEM*, Nice, France (2006) - **Invited**.
8. **W.K. Kim**, E.A. Payzant, S.S. Li, O.D. Crisalle and T.J. Anderson, "*In-situ* Investigation of Selenization of Cu-Ga-In Metallic Precursors." *World Conference on Photovoltaic Energy Conversion (WCPEC-4)*, Waikoloa, Hi (2006).
9. E.A. Payzant, S.A. Speakman, **W.K. Kim** and T.J. Anderson, "HT-XRD *in-situ* characterization: processing of CuInSe₂ photovoltaic thin films", *ACA (American Crystallographic Association) Annual Meeting*, Orlando, FL (2005).
10. **W. K. Kim**, E. A. Payzant, S. Yoon, T. J. Anderson, O. D. Crisalle, V. Craciun and S.S. Li, "*In-situ* Investigation on Reaction Mechanism and Kinetics of CuInSe₂ Formation from Cu-In/Mo/Glass Precursor during Selenization", *ICDD (The International Centre for Diffraction Data) Spring Meeting*, Newtown Square, PA (2005).
11. **W.K. Kim**, E.A. Payzant, S. Yoon, T.J. Anderson, O.D. Crisalle, V. Craciun and S.S. Li, "*In-situ* Investigation on Reaction Kinetics of CuInSe₂ Formation from Cu-In/Mo/glass Precursor using Selenization", *MRS Spring meeting*, San Francisco, CA (2005).

12. J. Song, S.S. Li, S. Yoon, **W.K. Kim**, J. Kim, J. Chen, V. Craciun, T.J. Anderson, O.D. Crisalle, and F. Ren "Growth and Characterization of $Cd_xZn_{1-x}S$ Thin Film Buffer Layers by Chemical Bath Deposition ", *31st PVSC (IEEE)*, Orlando, FL (2005).
13. X. Wang, S.S. Li, **W.K. Kim**, S. Yoon, A. Baran, V. Craciun, T.J. Anderson, O.D. Crisalle and J. Venturini, " Investigation of Pulsed Laser Annealing and Rapid Thermal Annealing of CIGS films and devices ", *31st PVSC (IEEE)*, Orlando, FL (2005).
14. S. Yoon, C. Park, T. Komissarova, **W.K. Kim**, T.J. Anderson, R. Ahrenkiel, R. Noufi, O.D. Crisalle, S.S. Li and J.H. Jung, " The effect of Na on the defect structure in $CuInSe_2$ and $CuGaSe_2$ grown by molecular beam epitaxy", *31st PVSC (IEEE)*, Orlando, FL (2005).
15. **W.K. Kim**, E.A. Payzant, S. Yoon, T.J. Anderson, O.D. Crisalle, V. Craciun and S.S. Li, "In-situ Investigation on Reaction Mechanism and Kinetics of $CuInSe_2$ Formation from Cu-In/Mo/glass Precursor using Selenization", *National Center for Photovoltaics and Solar Program Review Meeting*, Denver, CO (2004).
16. X. Wang, S.S. Li, V. Craciun, **W.K. Kim**, S. Yoon, O.D. Crisalle, T.J. Anderson, and J. Venturini, "Investigation of Pulsed Laser Annealing (PLA) of CIGS-Based Solar Cells", *National Center for Photovoltaics and Solar Program Review Meeting*, Denver, CO (2004).
17. J. Song, S.S. Li, S. Yoon, V. Craciun, **W.K. Kim**, J. Kim, T.J. Anderson, O.D. Crisalle, and F. Ren, "Growth and Characterization of $Zn_xCd_{1-x}S$ Buffer Layers by Chemical Bath Deposition ", *National Center for Photovoltaics and Solar Program Review Meeting*, Denver, CO (2004).
18. **W.K. Kim**, S. Kim, E.A. Payzant, S.A. Speakman, S. Yoon, R.M. Kaczynski, R.D. Acher, T.J. Anderson, V. Craciun, O.D. Crisalle and S.S. Li, " Investigation on Reaction Pathway and Kinetics for α - $CuInSe_2$ Formation from an $In_2Se_3/CuSe$ Bilayer Precursor Film", *14th International Conference on Ternary and Multinary Compounds (ICTMC-14)*, Denver, CO (2004). - **Best Poster Award**.
19. L.L. Kerr, S.S. Li, S.W. Johnston, T.J. Anderson, O.D. Crisalle, **W.K. Kim**, J. Abushama, and R.N. Noufi, "Investigation of Deep-Level Defects in $Cu(In,Ga)Se_2$ Solar Cells by Deep-Level Transient Spectroscopy ", *19th European Photovoltaic Energy Conversion Conference and Exhibition*, Paris, France, June 7-11 (2004).
20. L.L. Kerr, S. Yoon, **W.K. Kim**, S. Kim, S. Kincal, R. Kaczynski, R. Acher, R. Noufi, K. Ramanathan, J. Keane, C-H, Chang, X. Wong, C-H Huang, J. Song, T.J. Anderson, O.D. Crisalle, and S.S. Li, "Rapid Thermal Processing of Cu-In-Se Precursors for Photovoltaic Applications", *AIChE meeting*, Fall (2003).
21. E.A. Payzant, S. Kim, **W.K. Kim**, and T.J. Anderson, "CuInSe₂ Growth From Precursor Films: Time-Resolved *in-situ* X-ray Diffraction Investigation", *The Denver X-ray Conference (DXC)*, (2003).
22. S. Kim, **W.K. Kim**, E.A. Payzant, R.M. Kaczynski, R.D. Acher, S. Yoon, T.J. Anderson, O.D. Crisalle, and S.S. Li, "Investigation of $CuInSe_2$ Growth Kinetics using Time-resolved High Temperature XRD", *MRS Spring meeting*, San Francisco, CA (2003).
23. S. Yoon, S. Kim, **W.K. Kim**, R.M. Kaczynski, R.D. Acher, T.J. Anderson, O.D. Crisalle, and S.S. Li, "Epitaxial Growth of $CuInSe_2$ on GaAs (100)", *Florida chapter of the AVS science and technology society (FLAVS) annual symposium*, Orlando, FL (2003).

24. **W.K. Kim**, S.-S. Na, J.W. Seo, J. Lee, K. Lo, and C. Han "Polypropylene Properties Monitoring Using RTD Based Dynamic PLS Model ", *7th International Workshop on Polymer Reaction Engineering*, Hamburg, Oct. 8~10 (2001).
25. M. Kim, C. Han, B. Lee, J. Lee, **W. K. Kim**, and K. Lo "Soft sensor design for melt index estimation of a poly -propylene process with multiple operation modes", *6th IFAC Symposium on Dynamics and Control of Process Systems (DYCOPS-6)*, Korea, Jun.4~6 (2001).
26. J.W. Seo, S.-S. Na, **W.K. Kim**, and J. Lee, "Advanced Process Control System for Polymerization Pilot Plant." *AICHE Spring National Meeting*, Houston TX, April 22~26 (2001).
27. K. Lo, **W.K. Kim**, S.J. Oh, and C. Han "Requirements for an advanced process control system for polymer industry: Industrial perspective", Invited Lecture, *PSE-ASIA 2000*, Kyoto, Japan, Dec.6~8 (2000).
28. **W.K. Kim**, J.J. Kim, K. Char, and C.K. Kim, "Coarsening Mechanism In Thermally Induced Phase Separation Process", *The Polymer Society of Korea*, Fall (1995).
29. **W.K. Kim**, J.J. Kim, K. Char, and C.K. Kim, "The Effect of Nylon Structure on the Miscibility with Poly(Ethylene Glycol)", *The Polymer Society of Korea*, Spring (1995).

■ PATENTS

1. **W.K. Kim** and Tim Anderson,
"Chemical Vapor Deposition of $\text{CuIn}_x\text{Ga}_{1-x}(\text{Se}_y\text{S}_{1-y})_2$ Thin Films and Uses Thereof"

PCT Patent applied, PCT/US2008/065400 (May 31, 2008)
2. J. Lee, **W.K. Kim** and S.H. Kim,
"Method of Estimating the Properties of A Polymer Product"

U.S. Patent No. 7024313 B2 (April 4, 2006)
Korean Patent No. 10-0586728 (May 29, 2006)
European Patent Issued, 01 957 040.7 (August 21, 2001)
Japanese Patent Issued, 2002-521976 (August 21, 2001)
PCT Patent Issued, PCT/KR01/01415 (August 21, 2001)
3. **W.K. Kim**, K. Lo, and I.S. Kim,
"Prepolymerization Method of α -Olefin"

U.S. Patent No. 6897274 B2 (May 24, 2005)
Chinese Patent No. ZL 01819704.3 (July 13, 2005)
Korean Patent No. 0389961 (June 20, 2003)
European Patent Issued, 01 981 108.2 (October 18, 2001)
PCT Patent Issued, PCT/KR01/01757 (October 18, 2001)

■ REFERENCES

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University of Florida, Gainesville, FL 32611, USA
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Dr. Kookheon Char (MS Thesis Advisor)
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