

年 報

化 人

材 料 科 學 研 究 室

Materials Science Lab.

성균관대학교 화학과

西紀 2010年 (庚寅年) 送舊迎新 西紀 2011年 (辛卯年)

檀紀 4343年 2010년을 보내며 檀紀 4344年

材料 科學 研究室

Materials Science Lab.

成均館大學校 化學科

Dept. of Chemistry, Sungkyunkwan Univ.

613年 傳統과 117年 (58年?) 尖端의 調和
(眞理探究와 人格修養의 調化?合 바라며)

성균관대학교 재료과학연구소 개요

- 연구실 : 재료과학 연구실
- 교 수 : 부진효
- 전 화 : +82-31-290-7072
- 팩 스 : +82-31-290-7075
- 주 소 : 440-746 경기도 수원시 장안구 천천동 300,
성균관대학교 화학과

Profile of Materials Science Lab.

- Name of Laboratory : Materials Science Lab.
- Name of Director : Prof. Jin-Hyo Boo
- Phone : +82 - 31 - 290 - 7072
- Fax : +82 - 31 - 290 - 7075
- Address : Dept. of Chemistry, Sungkyunkwan University.

Suwon 440-746, Korea

Main Goals of Materials Science Lab.

Atomic-level Understanding of Materials Science and Surface Process

(From Surface Science to Material Science & Technologies)

Materials Science

1. MOCVD of various materials such as carbides, nitrides, and oxides.
2. High-rate & large area deposition using PVD (RF and DC unbalanced magnetron sputtering) methods.
3. Plasma polymerization by plasma assisted CVD methods.
4. Nanochemistry - nanoparticles, nanowires, whiskers, nanotubes.
5. Synthesis of the new functional materials for NT, BT, IT, & EE(energy&environment)T applications.
6. Bio-mimetic coatings & selective deposition with combination of CVD and micro-printing methods.
7. Development of environmentally friendly industrial process (NO_x/SO_x, Photocatalysis, Antifogging&Self-cleaning) using new functional materials.

Surface Science

1. Surface energy control with plasma treatment.
2. Surface modification with atmospheric and vacuum plasmas.
3. Functionalization of polymers for flexible electronic devices applications.
4. Development of new model catalyst & kinetic study on their initial growth.
5. Study on surface & interface chemistry for solar cells (DSSC, organic SCs), displays (OLED, PDP), and semiconductors (OTFT) applications.

Materials Science Laboratory 주요 보유기술

1. MOCVD용 단일 전구체 개발 및 화합물반도체 에피성장 기술
Korea Patent No. 111240 (1997년) and No. 197445 (1999년)
EU Patent No. 0723600 (2001년)
2. Micro-Contact Printing(Self-Assembled Monolayer) 방법을 이용한 산화물박막의 Patterning 및 선택적 화학기상증착 기술
Korea Patent No. 0318113 (2001년)
3. PECVD법을 이용한 유기고분자막 합성기술
Korea Patent No: 0409040 (2003년)
4. 고효율 마그네트론 스퍼터링법에 의한 High-rate deposition 기술
“Sputtering apparatus for the deposition of Poly-Si and highly functional thin-film coating by high rate pulse-DC magnetron sputtering source”,
Korea Patent No. 0310784 (2001년)
5. High and Low Dielectrics 박막 제조기술
Korea Patent No: 0409040 (2003년)
6. 내산화 방지막 제조기술
Korean Patent No : 10-0468283 (2005년)
7. 산소 플라즈마를 이용한 초진수성 박막 증착 기술
Korean Patent No : 10-2009-0118480 (2009년)
8. 입자 크기 조절을 위한 분부 분사장치의 제조 기술
Korean Patent No : 10-2009-0112221 (2009년)
9. 산화아연 박막의 식각에 의한 비저항 감소 기술
Korean Patent No : 10-2009-0104232 (2009년)
10. 백금 나노입자의 일산화탄소 산화반응 증가 기술
Korean Patent No : 10-2009-0056667 (2009년)

Major Research Systems of Materials Science Lab.

- Plasma Polymerization System
- High Vacuum CVD System
- Ultra High Vacuum(UHV) CVD System
- Thermal MOCVD System
- High Frequency RF PECVD System
- Vacuum Furnace System
- RF Magnetron Sputtering System
- Unbalanced DC Magnetron Sputtering System
- High Vacuum Dual Magnetron Sputtering System
- Plasma Surface Treatment System with Microwave Plasma
- Atmospheric Plasma Surface Treatment System

2010년 Materials Science Lab. 주요 연구실적

※ SCI 발표 논문 (총 22편 - 단독 8편, 공동 14편)

1. Properties of ZnO:Al Films Prepared by Spin Coating of Aged Precursor Solution, Shankar Prasad Shrestha, Rishi Ghimire, Jeevan Jyoti Nakarmi, Young-Sung Kim, Sabita Shrestha, Chong-Yun Park, Jin-Hyo Boo, *Bulletin of the Korean Chemical Society*, 31(1) (2010.01) 112-115.
2. XPS Analysis by Exclusion of α -Carbon Layer on Silicon Carbide Nanowires by a Gold Catalyst-Supported Metal-Organic Chemical Vapor Deposition Method, Sang-Hun Nam, Myung-Hwa Kim, Jae-Sung Hyun, Young Dok Kim, and Jin-Hyo Boo, *Journal of Nanoscience and Nanotechnology*, 10(4) (2010.03) 2741-2745.
3. Pretreatment Effect on CO Oxidation over Highly Ordered Mesoporous Silver Catalyst, Jeong Kuk Shon, Jung-Nam Park, Seong Hee Hwang, Mingshi Jin, Kiyong Moon, Jin-Hyo Boo, Tae Hee Han, and Ji Man Kim, *Bulletin of the Korean Chemical Society*, 31(2) (2010.02) 415-418.
4. Growth of TiO₂ Nanorods on a Ta Substrate by Metal-Organic Chemical Vapor Deposition, Kang Suk Lee, Jae-Sung Hyun, Hyun Ook Seo, Young Dok Kim, and Jin-Hyo Boo, *Journal of Nanoscience and Nanotechnology*, 10(5) (2010.05) 3346-3349.
5. Preparation of polypyrrole-incorporated mesoporous carbon-based composites for confinement of Eu(III) within mesopores, Yongju Jung, Hyung Ik Lee, Jin-Hoe Kim, Myung-Hee Yun, Jaesik Hwang, Do-Hee Ahn, Jung-Nam Park, Jin-Hyo Boo, Kyoung-Shin Choi, and Ji-Man Kim, *Journal of Materials Chemistry*, 20(22) (2010.05) 4663-4668.
6. Highly Ordered Mesoporous α -Mn₂O₃ for Catalytic Decomposition of H₂O₂ at Low Temperatures, Jung-Nam Park, Jeong Kuk Shon, Mingshi Jin, Seong Hee Hwang, Gwi Ok Park, Jin-Hyo Boo, Tae Hee Han, and Ji Man Kim, *Chemistry Letters*, 39(5) (2010.05) 493-495.
7. Metal-doped ZnO thin films: synthesis, etching characteristic, and application test for organic light emitting diode (OLED) devices, Sang-Hun Nam, Myung-Hwa Kim, Dong Geun Yoo, Seong Hun Jeong, Doo Yong Kim, Nae-Eung Lee, and Jin-Hyo Boo, *Surface Review and Letters*, 17(1) (2010.02) 121-127.
8. A study on characteristics of organic-inorganic hybrid plasma-polymer thin films by co-deposition on toluene and TEOS, Sang-Jin Cho, Sungwoo Lee, Donggeun Jung, and Jin-Hyo Boo, *Surface Review and Letters*, 17(3) (2010.06) 353-358.
9. Co-adsorption of CO and oxygen on W(100) surfaces, Taek-seung Yang, Hae-geun Jee, Jin-Hyo Boo, Young Dok Kim, and Soon-Bo Lee, *Vacuum*, 85(1) (2010.07) 65-68.
10. Spray pyrolysis of manganese doped zinc silicate phosphor particles, Sang-Hun Nam, Myung-Hwa Kim, Jun-Yong Lee, Sang Duck Lee, and Jin-Hyo Boo, *Functional Materials Letters*, 3(2) (2010.06) 97-100.

11. Low temperature fabrication and physical properties of 5 at.% Ga-doped ZnO films for transparent electrode applications, Young Hun Kang, Choon-Gi Choi, Sung-Yool Choi, Eunkyong Nam, Donggeun Jung, Jin-Hyo Boo, Jeong-Won Kim, Ji-Hong Jung, Jae Sang Cha, and Young-Sung Kim, *Functional Materials Letters*, 3(2) (2010.06) 101–105.
12. Fixation of carbon nanotube within mesoporous titania particles, Sung Soo Kim, Jin Hoe Kim, Jeong An Yoon, Mingshi Jin, Jung-Nam Park, Jeong Kuk Shon, Yoon Yun Lee, Jin-Hyo Boo, and Ji Man Kim, *Functional Materials Letters*, 3(2) (2010.06) 115–118.
13. The effect of annealing atmospheres on structural, electrical and optical properties of the ATO films prepared by RF magnetron sputtering, Sung Uk Lee, Byungyou Hong, and Jin-Hyo Boo, *Functional Materials Letters*, 3(2) (2010.06) 119–123.
14. Characteristics of Organic-Inorganic Hybrid Plasma-Polymer Thin Films for Low-k ILD Applications, Sang-Jin Cho, In-Seob Bae, and Jin-Hyo Boo, *Thin Solid Films*, 518(22) (2010.09) 6417–6421.
15. A low dielectric study on hybrid plasma-polymer thin films of different ratio between toluene and TEOS, S.-J. Cho, S. Lee, D. Jung, and J.-H. Boo, *J. of Nanoscience and Nanotechnology*, 10 (2010) **In press**.
16. Polyimide Surface modification by Using Microwave Plasma for Adhesion Enhancement of Cu Electroless Plating, Sang-Jin Cho, Trieu Nguyen, and Jin-Hyo Boo, *J. of Nanoscience and Nanotechnology*, (2010) **In press**.
17. Growth behavior and characteristics of one dimensional ZnO nanostructures by metalorganic chemical vapor deposition, Sang-Hun Nam, Seong Hun Jeong, and Jin-Hyo Boo, *J. of Nanoscience and Nanotechnology*, (2010) **In press**.
18. Surface Property Change of C doped TiO₂ Nano-pillars by O₂ Plasma Treatment, Kang Suk Lee, Sang-Hun Nam, Hyun Ook Seo, Sang Duck Lee, Young Dok Kim, and Jin-Hyo Boo, *J. of Nanoscience and Nanotechnology*, 10 (2010) **In press**.
19. Surface Plasma Treatment of Polyimide Film for Cu Metallization, Sang-Jin Cho, Jin-Woo Choi, In-Seob Bae, Trieu Nguyen, and Jin-Hyo Boo, *Jap. J. of Appl. Phys.* 50(1) (2011) **In press**.
20. Study of the Characteristics of Organic Thin Film Transistors with Plasma-Polymer Gate Dielectrics, Sang-Jin Cho, In-Seob Bae, Young Gug Seol, Nae-Eung Lee, Yong Seob Park, and Jin-Hyo Boo, *Jap. J. of Appl. Phys.* 50(1) (2011) **In press**.
21. Rutile structured SnO₂ nanowires synthesized with metal catalyst by thermal evaporation method, Sang-Hun Nam and Jin-Hyo Boo, *J. of Nanoscience and Nanotechnology*, 10 (2010) **In press**.

22. Deposition of TiOxNy Thin Films with Various Nitrogen Flow Rate: Growth Behavior and Structural Properties, S. -J. Cho, C.-K. Jung, I.-S. Bae, Y.-H. Song, and J.-H. Boo, **Modern Phys. Lett. B** (2010) In press.

※ 비SCI 발표 논문 (총 1편 - 단독 2편, 공동 1편)

1. Surface Modification of TiO2 by Atmospheric Pressure Plasma, S.-J. Cho, C.-K. Jung, S.-S. Kim, and J.-H. Boo, *Journal of the Korean Vacuum Society* (한국진공학회지) 19(1) (2010.01) 22-27.

2. Synthesis of Zn2SiO4:Mn Phosphor Particles by Spray-pyrolysis Method, Sang-Hun Nam, Myoung-Hwa Kim, Sang Duck Lee, and Jin-Hyo Boo, *Journal of the Korean Vacuum Society* (한국진공학회지) 19(1) (2010.01) 66-71.

3. Synthesis of Porous Cu-ZnO Composite Sphere and CO Oxidation Property, Jung-Nam Park, Seong Hee Hwang, Mingshi Jin, Jeong Kuk Shon, Sun Sang Kwon, Jin-Hyo Boo, and Ji Man Kim, *Applied Chemistry for Engineering* (한국공업화학학회지) 21(3) (2010) 328-332.

※국내 학술회의 발표 논문

| 순번 | 논문명 | 성명 | 학회명 | 비고 (발표연월) | 장소 | 발표형식 |
|----|--|------------------------------|---|-------------------|-----------|------|
| 1 | study on the superhydrophilicity of TiO ₂ films on glasses by thermal CVD | 최진우, 조상진, 남상훈, 김영득, 부진호 | 제38회 한국진공학회 동계정기학술대회 | 2010.02.17 -02.19 | 횡성 | 포스터 |
| 2 | Characterization and photocatalytic effect of ZnO nanoparticles synthesized by spray-pyrolysis method | 이상덕, 남상훈, 김명화, 이상덕, 김영득, 부진호 | | | | 포스터 |
| 3 | The deposition of superhydrophilic TiO ₂ films on glass by thermal chemical vapor deposition | 최진우, 조상진, 김영득, 부진호 | 2010 BK21 Symposium on Chemical Materials Science | 2010.02.22 -02.23 | 홍천 비발디파크 | 포스터 |
| 4 | Study on hybrid plasma-polymer thin films of different ratio between toluene and TEOS for low dielectrics | 조상진, 부진호 | 대한화학회 제105회 총회, 학술발표회 및 기기전시회 | 2010.04.29 -04.30 | 인천 송도컨벤시아 | 포스터 |
| 5 | Hydrophilicity of TiO ₂ thin films obtained by thermal chemical vapor deposition | 최진우, 부진호 | | | | 포스터 |
| 6 | TiO ₂ anti-reflection layers for textured silicon wafers by metal organic chemical vapor deposition | 최진우, 남상훈, 조상진, 부진호 | 제103차 대한화학회 물리화학분과회 하계 심포지움 | 2010.07.01 -07.03 | 무창포 비체펠리스 | 포스터 |
| 7 | High photocatalytic activity of ZnO nanoparticles prepared by spray-pyrolysis method | 이상덕, 남상훈, 조상진, 부진호 | | | | 포스터 |

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| 8 | Change in the photocatalytic activity of ZnO nanoparticles by additive H ₂ O | 남상훈, 김명화, 이상덕, 최진우, 김민희, 부진효 | 제39회 한국진공학회 하계 정기 학술대회 | 2010.08.18 -08.20 | 무창포 비체펠리스 | 포스터 |
| 9 | Surface modification of TiO ₂ by atmospheric pressure plasma | 조상진, 정충경, 부진효 | | | | 구두 |
| 10 | Preparation and characterization of ZnO photocatalyst and their photocatalysis | 이상덕, 남상훈, 조상진, 부진효 | | | | 포스터 |
| 11 | Preparation and characterization of TiO ₂ anti-reflective layer for textured Si(100) | 최진우, 남상훈, 조상진, 부진효 | | | | 포스터 |

※국제 학술회의 발표 논문

| 순번 | 논문명 | 성명 | 학회명 | 비고 (발표연월) | 장소 | 발표형식 |
|----|--|---|--|----------------------|----------|------|
| 1 | Synthesis of ZnO nanoparticles by spray-pyrolysis method and their photocatalytic effect | Sang Duck Lee, Sang-Hun Nam, Myoung-Hwa Kim, Young Dok Kim, Jin-Hyo Boo | IEEE International NanoElectronics Conference | 2010.01.03 -01.08 | 중국, 홍콩 | 포스터 |
| 2 | study on the Changes of Surface Property of Grown C-TiO ₂ Films by O ₂ plasma Treatment | Kang Suk Lee, Sang-Hun Nam, Hyun Ook Seo, Sang Duck Lee, Young Dok Kim, Jin-Hyo Boo | | | | 포스터 |
| 3 | Toluene-TEOS hybrid plasma-polymer thin films for interlayer dielectric materials | S.-J. Cho, S. H. Nam, J.-H. Boo | The 10th International Workshop on Advanced Plasma Processing and Diagnostics | 2010.01.08 -01.10 | 일본, 나가사키 | 포스터 |
| 4 | A Study on surface plasma Treatment of Polyimide Film for Cu Metallization | Trieu Nguyen, Sang-Jin Cho, Jin-Woo Choi, Jin-Hyo Boo | 2nd International Symposium on Advanced Plasma Science and its Applications for Nitrides and Nanomaterials (ISPlasma 2010) | 2010.03.07 -03.10 | 일본, 나고야 | 포스터 |
| 5 | Structural, electrical and optical properties of SnO ₂ :Sb films prepared on flexible substrate at room temperature | SUNG UK LEE, JIN-HYO BOO, BYUNGYOU HONG | | | | 포스터 |
| 6 | An enhanced photo-catalytic effect of synthesized-ZnO nanoparticles by O ₂ plasma surface treatment | MYOUNG-HWA KIM, SANG-HUN NAM, YOUNG DOK KIM, JIN-HYO BOO | | | | 포스터 |
| 7 | The Measurement of SU-8 Coating Thickness using Neutral Mechanical Plasma in ZnO based Thin Film Transistors | D.-K. LEE, J. -H. BOO, Y. -J. KIM | | | | 포스터 |
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|----|---|--|--|-------------------|---------------|-----|
| 8 | ZnO nano-materials: Synthesis, Characteristic, and Application | S.-H. Nam, M.-H. Kim, S. D. Lee, B. Hong, Y.-J. Kim, Jin-Hyo Boo | The 3rd International Conference on PLAsma-Nano Technology & Science | 2010.03.11 -03.12 | 일본, 나고야 | 초청 |
| 9 | Study on characteristics of OFETs with plasma-polymer gate dielectric | S.-J. Cho, S. H. Nam, Y.G. Seol, N.-E. Lee, J.-H. Boo | Organic and Inorganic Electronic Materials and Related Nanotechnologies | 2010.06.22 -06.25 | 일본, 도야마 | 포스터 |
| 10 | Deposition of ZnO thin films on the various substrates by RF sputtering system and their structural, optical and electrical properties | Min Hee Kim, Sang-Hun Nam, Sang Duck Lee, Jin-Hyo Boo | | | | 포스터 |
| 11 | A study on surface modification of plasma polymer thin films for DNA fixation by DBD plasma treatment system | Sang-Jin Cho, Hyung Jin Kim, Byungyou Hong, Jin-Hyo Boo | The 10th Asia Pacific Conference on Plasma Science and Technology and the 23th Symposium on Plasma Science for Materials | 2010.07.04 -07.08 | 한국, 제주 | 포스터 |
| 12 | Surface treatment for Cu metallization on polyimide film by atmospheric pressure dielectric barrier discharge plasam system | Sang-Jin Cho, Shankar P. Shrestha, Jin-Hyo Boo | | | | 포스터 |
| 13 | Comparision of photocatalytic properties of TiO ₂ thin films perpared by sol-gel method and reactive magnetron sputtering system | S.-H. Nam, S.-J. Cho, C.-K. Jung, J.-H. Boo, J. Sicha, D. Herman, J. Musil, J. Vlcek | | | | 포스터 |
| 14 | Synthesis of N-doped TiO ₂ photocatalytic Thin Films with Controlled Nitrogen Partial Pressure and Study on Their Catalytic Activity | Sang-Jin Cho, Chung-Kyung Jung, Yong-Hwa Song, Jin-Hyo Boo | First International Conference on Materials for Energy | 2010.07.04 -07.08 | 독일, karlsruhe | 포스터 |
| 15 | Growth of TiO ₂ anti-refelction layer on textured Si(100) wafer substrate by MOCVD method | Choi Jin-Woo, Nam Sang-Hun, Cho Sang-Jin, Boo Jin-hyo | Nano and Giga Challenges in Electronics, Photonics and Renewalble Energy & 14th Canadian Semiconductor Technology Conference | 2010.07.11 -07.14 | 중국, 하얼빈 | 포스터 |
| 16 | Deposition of metal doped ZnO films for SAWs (Surface Acoustic Waves) application and study on their physical properties | Nam Sang-Hun, Kim Myoung-Hwa, Choi Jin-Woo, Jeong Seong-Hun, Boo Jin-Hyo | Thin Films 2010 The 5th international conference on technological advances of thin films & surface coatings | 2010.07.11 -07.14 | 중국, 하얼빈 | 포스터 |

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| 17 | TiOxNy thin films deposition by nitrogen flow rate: Growth behavior and structural properties | S.-J Cho, C.-K. Jung, I.-S. Bae, J.-H. Boo | the 6th International Conference on Advanced Materials processing | 2010.07.19 -07.23 | 중국, Lijiang, Yunnan | 포스터 |
| 18 | A study on characteristics of multilayered plasma-polymer thin films for interlayer dielectric materials using toluene and TEOS by PECVD | Sang-Jin Cho, Jin-Hyo Boo | IUMRS-ICEM 2010 | 2010.08.22 -08.27 | 한국, KINTEX | 포스터 |
| 19 | Influence on the photocatalytic activity of ZnO nanoparticles by additive water | Sang-Hun Nam, Myoung-Hwa Kim, Sang Duck Lee, Jin-Hyo Boo | | | | 포스터 |
| 20 | Wet-chemical etching of ZnO films using various acid solutions for TCO (Transparent Conductive Oxide) application | Sang-Hun Nam, Dong-Geun Yoo, Seong Hun Jeong, Jin-Hyo Boo | | | | 포스터 |
| 21 | Rutile structured SnO ₂ nanowires synthesized with metal catalyst by thermal evaporation method | Sang-Hun Nam, Myoung-Hwa Kim, Seong Hun Jeong, Jin-Hyo Boo | | | | 포스터 |
| 22 | Investigation of hydrogen adsorption on single wall carbon nanotubes | Sang-Hun Nam, Sang Duck Lee, Soon-Bo Lee, Jin-Hyo Boo | | | | 포스터 |
| 23 | In-situ Study on Thermal Decomposition of 1,3-Disilabutane on Silicon Carbide on Si(100) Surface | Hae-geun Jee, Sang Duck Lee, Jin-Hyo Boo, Seong Kyu Kim, Soon-Bo Lee | 18th International Vacuum Congress | 2010.08.23 -08.27 | 중국, 북경 | 포스터 |
| 24 | Synthesis and photocatalytic property of ZnO nanoparticles prepared by spray-pyrolysis method | Sang Duck Lee, Sang-Hun Nam, Myoung-Hwa Kim, Jin-Hyo Boo | | | | 포스터 |
| 25 | Crystal Structure Analyses of Bis(triisopropylsilylethynyl)-Pentacene Nanofilms Deposited on OTS-SAM and Poly(3,4-ethylenedioxythiophene) Surfaces | S. Kim, S. Choi, C. Yu, T. Kim, J.-H. Boo | | | | 포스터 |
| 26 | N-doped TiO ₂ Photocatalytic Thin Films : Synthesis with Controlled Nitrogen Partial Pressure and Study on Their Catalytic Activity | J.-H. Boo, S.-J. Cho, C.-K. Jung, Y.-H. Song | AVS 57th International Symposium and Exhibition | 2010.10.17 -10.22 | 미국, 뉴 멕시코 | 포스터 |
| 27 | Physical Properties of Zinc Oxide Thin Films for Hybrid Solar Cell Application | S.-H. Nam, M.-H. Kim, S. Kim, B. Hong, J.-H. Boo | | | | 포스터 |

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| 28 | Anti-reflection coating using titanium dioxide on textured Si(100) substrate by MOCVD method | Jin-Woo Choi, Sang-Hun Nam, Sang-Jin Cho, Jin-Hyo Boo | International Conference on Nano Science and Nano Technology | 2010.11.08 -11.09 | 한국, 광주, GIST | 포스터 |
| 29 | Growth of TiO ₂ Nanorod of switchable super hydrophobicity on silicon in thermal MOCVD | Jin-Woo Choi, Sang-Hun Nam, Sang-Jin Cho, Jin-Hyo Boo | | | | 포스터 |
| 30 | High photocatalytic efficiency of ZnO nanoparticles synthesized by spray-pyrolysis method | Sang Duck Lee, Sang-Hun Nam, Myoung-Hwa Kim, Jin-Hyo Boo | 2010 International Symposium on Dry Process | 2010.11.11 -11.12 | 일본, 도쿄공대 오카야마 캠퍼스 | 포스터 |
| 31 | Physical properties of ZnO thin films on glass and PES substrates by RF magnetron sputtering system | Sang-Hun Nam, Myoung-Hwa Kim, Sang Duck Lee, Jin-Hyo Boo | | | | 포스터 |

2011년 업무 분담 계획

※ Energy Materials Division

- ※ 상훈 : MO NSs (Hydrolysis, Furnace-60%), Glass texture (wet-10%), Flexible ZnO (RF Mag. Sputter-10%), TiO₂ films (H-MOCVD-10%), ZnO Nanoparticles (Spray-Pyrolysis-10%) with 은장
- ※ 준연 : Flexible ZnO (RF Mag. Sputter-40%)
- ※ 희수 : MO NSs (Hydrolysis, Furnace-60%), TiO₂ films (H-MOCVD-40%)
- ※ 원석 : ZnO Nanoparticles (Spray-Pyrolysis-60%), Glass texture (wet-40%)

※ Eco-materials Division

- ※ 상진 : Polymerization(PACVD-50%), MW & ATM Plasma Surface Treatments(50%),
 - ※ 준연 : Plasma Surface Treats & Functionalization (60%)
 - ※ 문봉 : Polymerization(PACVD-50%), MW & ATM Plasma Surf. Treats.(50%)
 - ※ Dr. Aiping : Plasma Surface Treats & Functionalization for Biosensors or Biochips
-

2011년 연구비 수주계획

1. 6월중순 : 연구재단 하반기 협동연구 과제 with 김지만
2. 7월중순 : 서울시 기초연구 과제 with 임상규
3. 기타

2011년 학회 논문 발표 계획

| No | YYMM | DD-DD | Conf. Name | Web-site | abstract | paper | registry | description | presenter | location | proceeding |
|----|------|-------|---------------------------|--|----------|--------|----------|--|-----------|-----------------------------------|--|
| 1 | 1101 | 8-11 | ISEPD2011 | http://www.isepd.org/ | 101030 | 101205 | 101203 | N-doped TiOxNy for DSSC (재성), TiO ₂ +SiO ₂ Nano composites (상훈) | 상훈? | Chiang Mai, Thailand | Research on Chemical Intermediates, Material Science Forum |
| 2 | 1101 | 16-20 | PCSI-38 | www.avs.org | 101018 | 110201 | | | | San Diego, USA | JVSTB |
| 3 | 1101 | 20-21 | IWDTF-11 | http://home.hiros-hima-u.ac.jp/iwdtf | 101025 | | 110113 | Low-K(polymer, 상진), ???(춘연) | 상진 | Tyoko, Japan | JJAP |
| 4 | 1103 | 6-9 | ISPlasma | www.isplasma.jp | 101115 | 110331 | 110131 | ZnO WCE(동근, 상훈)-switched from IUMRS2010, Cu Metallization (상진,Shankar) | | Nagoya, Japan | JJAP |
| 5 | 1103 | 10-11 | ICPLANTS | www.plasma.engg.nagoya-u.ac.jp/IC-2010 | | | | | | Nagoya, Japan | |
| 6 | 1104 | 7-9 | ICMSE2011 | www.icmse.net | 101031 | 101201 | | | | Guilin, China | Adv. Mats. Res., |
| 7 | 1104 | 13-15 | ICREPQ'11 | www.icrepq.com | 101030 | | | 태양전지, 재생에너지 | | Las Palmas de Gran Canaria, Spain | |
| 8 | 1104 | 16-21 | SVC2011 | www.svc.org | 101001 | | | | | Chicago, USA | |
| 9 | 1104 | 25-29 | MRS2011 | www.mrs.org | 101102 | | | | | San Francisco, USA | |
| 10 | 1105 | 2-6 | ICMCTF2011 | www.avs.org | | | | | | San Diego, USA | TSF, SCT |
| 11 | 1105 | 9-13 | E-MRS2011& IUMRS ICAM2011 | www.emrs-strasbourg.org.com | 101221 | | | Biomaterials (상진), DNA (배인섭) e-MRS, DSSC (상훈), ThinFilms (상훈) | 상훈 | Nice, France | Biomaterials, Energy & Environmental Sci., SCT? |
| 12 | 1105 | 10-13 | C-ICSE2011 | icrp.xjtu.edu.cn/meeting.php?blogid=14 | 101231 | 110415 | | Surf. Eng.(Surf. Modification) | | Xian, China | Rare Metals Materials and Engineering |
| 13 | 1105 | 22-26 | ICHMM-2011 | ichmm2011.shu.edu.cn | 101115 | 110330 | 110330 | Materials for energy, Surface & Coatings Behavior; composites, biomaterials, nanomaterials, porous mats. | | Sanghai, China | |
| 14 | 1105 | 22-27 | ALC2011 | alc.surf.nuqe.nagoya-u.ac.jp/alc11/ | 101130 | | | ZnO NEXAFS (상훈), NT (강희재교수) | 상훈 | Seoul, Korea | Surface & Interface Analysis |
| 15 | 1106 | 26-1 | ICMAT2011 | www.mrs.org.sg/icmat2011 | 101231 | | | | ?? | Singapore | |
| 16 | 1107 | 4-7 | ICMAP2011 | www.ICMAP2011.org | | | | Thin Films, Surf. Treatment | 춘연(BK21) | Dalian, China | TSF |
| 17 | 1107 | 6-8 | ISSP2011 | www.issp2011.org | 110117 | 110708 | 110516 | Sputtering, Plasma process | | Kyoto, Japan | Vacuum |
| 18 | 1107 | 28-31 | IFFM2011 | www.iffm2011.org | 110430 | 110731 | 110630 | Functional Mats. | | Jeju, Korea | NRL, MRB, FML |
| 19 | 1108 | 2-6 | ISFM-4 | http://res.tagen.hokudai.ac.jp/~isfm2011 | 110228 | | | Functional Mats. | (BK21) | Sendai, Japan | JNN, FML |
| 20 | 1108 | 14-18 | IMRC2011 | www.mrs.org | | | | | | Cancun, Mexico | |
| 21 | 1108 | 21-26 | ICCM18 | www.iccm18.org | 110115 | 110531 | 110531 | Functional & Nano-composite materials | | Jeju, Korea | SCI & SCI-E |

| | | | | | | | | | | | |
|----|---------|------------|----------------|---|--------|--------|--------|--|-------|------------------|----------------------|
| 22 | 1108 | 22-26 | ICANS24 | http://www.icans24.org/index.html | 110330 | 110801 | 110701 | Amorphous & non-crystalline semiconductors, Organic semiconductors | 상진?? | Nara, Japan | J. Non-Cryst. Solids |
| 23 | 1108 | 24-26 | NanoKorea2011 | www.nanokorea.or.kr | | | | | | Seoul, Korea | |
| 24 | 1108/9 | 29-2 | ECOSS2011 | www.IUVSTA.org | | | | | | Poland | SS |
| 25 | 1109 | 7-9 | ChinaNANO2011 | www.chinanano.org | 110430 | 110731 | 110630 | Nano-materials | 상훈?? | Beijing, China | JNN |
| 26 | 1109 | 9-11/12-14 | ECM112/ICAPT-4 | www.IUVSTA.org | | | | | | Piran, Slovenia | |
| 27 | 1109 | 11-16 | ICSCRM2011 | https://icscrm2011.grc.nasa.gov/ | 110501 | | | SiC and Related Materials | | Cleveland, USA | |
| 28 | 1109 | | AEPSE2011 | aepse2011.mse.tsinghua.edu.cn/ | | | | | 상진?? | Dalian, China | TSF, SCT |
| 29 | 1110 | 10-12 | EuroPM2011 | http://www.epma.com/pm_2011/home_2011.htm | | | | Powder Metallurgy | | Barcelona, Spain | |
| 30 | 1110 | 16-20 | MS&T2011 | — | | | | | | Columbus, USA | |
| 31 | 1110/11 | 30-4 | AVS58 | www.avs.org | | | | | | Nashville, USA | JVSTA |
| 32 | 1111 | 8-11 | ICTF-2011 | www.ictf15.jp | 110630 | | | | 상훈 ?? | Kyoto, Japan | TSF |