

JANG, MIN SEOK

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EDUCATION

- | | |
|---|-----------|
| California Institute of Technology (Caltech)
Ph.D. in Applied Physics (Minor: Physics) | 2007-2013 |
| Korea Advanced Institute of Science and Technology (KAIST)
B.S. in Physics (First rank, Minor: Mathematics) | 2003-2006 |

RESEARCH AND PROFESSIONAL EXPERIENCE

- | | |
|---|----------------------------|
| Korea Advanced Institute of Science and Technology, Assistant Professor
School of Electrical Engineering | 2016-present |
| Seoul National University, Postdoctoral Fellow
Global Frontier Center for Multiscale Energy Systems
Alternative military service
Advisor: Prof. Mansoo Choi | 2013-2016 |
| Caltech, Visiting Scientist
"Light-Material Interactions in Energy Conversion" Energy Frontier Research Center | Spring 2013
Summer 2014 |
| Caltech, Graduate Researcher
Advisor: Prof. Harry A. Atwater | 2007-2012 |
| Samsung Advanced Institute of Technology, Internship
Semiconductor Device and Material Laboratory | Summer 2008 |
| Korea Research Institute of Standards and Science, Internship
Nano Surface Group | Winter 2006 |

HONORS AND AWARDS

- | | |
|--|-----------|
| • POSCO TJ Park Postdoctoral Fellowship | 2014-2015 |
| • Samsung Graduate Scholarship | 2007-2012 |
| • Graduation from KAIST as the Class Valedictorian | 2006 |
| • KAIST Physics Department Merit-based Scholarship | 2006 |
| • General Electric Undergraduate Scholarship | 2005-2006 |
| • College Student Scholarship from Korea Foundation for Advanced Studies | 2005-2006 |
| • KAIST Entrance Scholarship | 2003 |

PUBLICATIONS

JOURNAL ARTICLES (+: equal contributions *: corresponding author)

1. Debbichi L⁺, Lee S⁺, Cho H, Rappe AM, Hong K-H, **Jang MS***, and Kim H^{*}
Mixed valence perovskite Cs₂Au₂I₆: a potential material for thin-film Pb-free photovoltaic cells with ultrahigh efficiency
Adv Mater 30, 1707001 (2018).
Selected for the front cover
2. Kim S⁺, **Jang MS***, Brar VW⁺, Mauser KW, Kim L, and Atwater HA^{*}
Electronically tunable perfect absorption in graphene
Nano Lett. 18, 971 (2018).
3. Lee K, Choi H, Kim DS, **Jang MS***, and Choi M^{*}
Vertical stacking of three-dimensional nanostructures via an aerosol lithography for advanced optical applications.
Nanotechnology 28, 475302 (2017).
4. Ahn N⁺, Kwak K⁺, **Jang MS**, Yoon H, Lee BY, Lee J-K, Pikhitsa PV, Byun J, and Choi M^{*}
Trapped charge-driven degradation of perovskite solar cells.
Nat. Commun. 7, 13422 (2016).
5. Kim S⁺, **Jang MS***, Brar VW⁺, Tolstova Y, Mauser KW, and Atwater HA^{*}
Electronically tunable extraordinary optical transmission in graphene plasmonic ribbons coupled to subwavelength metallic slit arrays.
Nat. Commun. 7, 12323 (2016).
6. Ha K, Jang E, Jang S, Lee J-K, **Jang MS**, Choi H, Cho J-S^{*}, and Choi M^{*}
A light-trapping strategy for nanocrystalline silicon thin-film solar cells using threedimensionally assembled nanoparticle structures.
Nanotechnology 27, 055403 (2016).
7. Sung H⁺, Ahn N⁺, **Jang MS**, Lee J-K, Yoon H, Park N-G, and Choi M^{*}
Transparent conductive oxide-free graphene-based perovskite solar cells over 17% efficiency.
Adv. Energy Mater. 6, 1501873 (2016).
8. Lee J-K, Sung H, **Jang MS**, Yoon H, and Choi M^{*}
Reliable doping and carrier concentration control in graphene by aerosol-derived metal nanoparticles.
J. Mater. Chem. C 3, 8294 (2015).
Selected for the front cover.
9. Brar VW, Sherrott MC, **Jang MS**, Kim S, Kim L, Choi M, Sweatlock LA, and Atwater HA^{*}
Electronic modulation of infrared radiation in graphene plasmonic resonators.
Nat. Commun. 6, 7032 (2015).
10. **Jang MS***, Brar VW⁺, Sherrott MC, Lopez JJ, Kim L, Kim S, Choi M, and Atwater HA^{*}
Tunable large resonant absorption in a midinfrared graphene Salisbury screen.
Phys. Rev. B 90, 165409 (2014).
11. Brar VW⁺, **Jang MS***, Sherrott M, Kim S, Lopez JJ, Kim LB, Choi M, and Atwater HA^{*}
Hybrid surface-phonon-plasmon polariton modes in graphene/monolayer h-BN heterostructures.
Nano Lett. 14, 3876 (2014).
12. **Jang MS***, Kim H⁺, Son YW, Atwater HA^{*} and Goddard WA^{*}
Graphene field-effect transistor without an energy gap.
Proc. Natl. Acad. Sci. 110, 8786 (2013).

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13. Brar VW⁺, **Jang MS**⁺, Sherrott M, Lopez JJ, and Atwater HA*
Highly confined tunable mid-infrared plasmonics in graphene nanoresonators.
Nano Lett. 13, 2541 (2013).
Highlighted in Nature Photon. 7, 511 (2013).
14. **Jang MS** and Atwater HA*
Plasmonic rainbow trapping structures for light localization and spectrum splitting.
Phys. Rev. Lett. 107, 207401 (2011).
15. **Jang MS**⁺, Kim H⁺, Atwater HA*, and Goddard WA*
Time dependent behavior of a localized electron at a heterojunction boundary of graphene.
Appl. Phys. Lett. 97, 043504 (2010).
Selected for the Virtual Journal of Nanoscale Science & Technology

BOOK CHAPTERS

1. Kim H, **Jang MS**, Atwater HA, and Goddard WA
“Electron Optics in Graphene.” in *Handbook of Nanoscience, Engineering, and Technology*, 3rd ed.,
edited by Goddard WA, Brenner D, Lyshevski SE, and Iafrate GJ (CRC Press, 2012).

PRESENTATIONS

INVITED TALKS

1. **Korea Electronics Technology Institute (KETI)**, Seongnam, Korea 4/2018
2. **Optical Society of Korea Winter Meeting**, Gwangju, Korea 2/2018
3. **National Nanofabrication Center (NNFC)**, Daejeon, Korea 12/2017
4. **Korea Physical Society Fall Meeting**, Gyeongju, Korea 10/2017
5. **SNU Convergence**, Suwon, Korea 10/2017
6. **International Conference on Advanced Laser Technologies**, Busan, Korea 9/2017
7. **Korea Institute of Machinery and Materials**, Daejeon, Korea 8/2017
8. **KAIST Department of Mathematics**, Daejeon, Korea 7/2017
9. **Conference on Optoelectronics and Optical Communications**, Busan, Korea 6/2017
10. **KAIST Department of Physics**, Daejeon, Korea 11/2016
11. **International Conference on Electronic Materials and Nanotechnology for Green Environment (ENGE)**, Jeju, Korea 11/2016
12. **Yeungnam University School of Mechanical Engineering**, Gyeongsan, Korea 9/2016
13. **International Meeting on Information Display (IMID)**, Seogwipo, Korea 8/2016
14. **KAIST School of Electrical Engineering**, Daejeon, Korea 7/2015
15. **Advanced Lasers and Their Applications**, Seogwipo, Korea 5/2015
16. **Optical Society of Korea Winter Meeting**, Daejeon, Korea 1/2015
17. **KAIST Institute**, Daejeon, Korea 11/2013
18. **SKKU Advanced Institute of Nanotechnology**, Suwon, Korea 1/2013