

GIL JU LEE'S CURRICULUM VITAE

Department of Electronics Engineering (EE)
Pusan National University (PNU)
2, Busandaehak-ro 63beon-gil, Geumjeong-gu,
Busan, Republic of Korea 46241
Office: +82-51-510-2376 / Cell: +82-10-4174-5763
E-mail: gjlee0414@pusan.ac.kr, gjlee0414@gmail.com

RESEARCH INTERESTS

Novel photonic devices and advanced optoelectronics including zero-energy radiative cooler, multi-functional nanophotonic devices, wearable devices, and next-generation imaging devices

- ♦ Passive radiative coolers for aesthetic purposes and enclosed space
- ♦ Bio-inspired imaging systems for next-generation cameras inspired by animal eyes
- ♦ Optoelectronic wearable devices for healthcare
- ♦ Semiconductor nanowires for optical filter, coloration, and artificial photoreceptors

EDUCATION

Integrated M.S/Ph.D. Degree	<i>GIST Presidential Fellowship</i> Gwangju Institute of Science and Technology (GIST), Korea School of Electrical Engineering and Computer Science, Sept. 2016~ Feb. 2021 Advisor: Prof. Young Min Song
B.S. Degree	<i>Summa Cum Laude</i> Pusan National University, Korea Department of Electronics Engineering, Mar. 2009~ Feb. 2016

WORK EXPERIENCES

Postdoctoral research associate (Mar. 2021 – Aug. 2021), School of Electrical Engineering and Computer Science, GIST, Korea
Advisor: Prof. Young Min Song

AWARDS AND FELLOWSHIPS

Sejong Science Fellowship, National Research Foundation of Korea (NRF) (Mar. 2021 – Present)
(130,000 USD per year)

Haerim Prof. Un-Chul Paek award, GIST, Korea (19 February, 2021)

Golden Prize (Physical Devices & Processes), the 27th Samsung HumanTech Thesis Award, Samsung Electronics, Korea (2021)

Encouragement Award (Material Science & Engineering), the 27th Samsung HumanTech Thesis Award, Samsung Electronics, Korea (2021)

2020 Research Assistant Contests, GIST, Korea (16 December, 2020)

Robert S. Hilbert Memorial Student Travel Grant, 2020 FiO by OSA (2020)

2019 Research Assistant Contests, GIST, Korea (16 December, 2019)

Gold medal prize of 2018 Research Assistant Contests, GIST, Korea (13 December 2018)

The best poster awards (2nd place) in the 5th International Conference on Electronic Materials and Nanotechnology (ENGE) for Green environment 2018, Jeju-island, Korea, November 2018
Title: “Heat reduction in wearable devices by integrating radiative photonic structure and thin metal film”, **G. J. Lee**, S.-Y. Heo, and Y. M Song

Gold medal prize of 2017 Research Assistant Contests, GIST, Korea (22 December 2017)

Global Ph. D Fellowship from National Research Foundation of Korea (NRF) (Mar. 2017 – Feb. 2021) (20,000 USD per year)

IT Research Paper Award in Qualcomm-GIST Innovation Award (2016)
Title: “Design of multi-band filters by stacking polymer-embedded vertical silicon nanowires”

President’s scholarship in Gwangju Institute of Science and Technology (GIST) (Sep. 2016 – Aug. 2019).

PUBLICATIONS

41. M. S. Kim*, **G. J. Lee***, J. W. Leem, S. H. Choi, Y. Kim, and Y. M. Song, “Revisiting silk: a lens-free optical physically unclonable function”, *Submitted* (2021).

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40. D. H. Kim*, **G. J. Lee***, S.-Y. Heo, S. Son, K. M. Kang, H. Lee, and Y. M. Song, “Ultra-thin and near-unity selective emitter for affordable and efficient radiative cooling”, *Submitted* (2021).

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39. S. K. Heo, J. Ha, S. J. Son, I. S. Choi, H. Lee, S. Oh, J. Jekal, M. H. Kang, **G. J. Lee**, H. H. Jung, J. Yea, T. Lee, Y. Lee, J.-W. Choi, S. Xu, J. H. Choi, J.-W. Jeong, Y. M. Song, J.-C. Rah, H. Keum, K.-I. Jang, “Instant, multi-scale dry transfer printing by atomic diffusion control at heterogeneous interfaces”, *Sci. Adv.*, *Accepted* (2021).

38. Z. F. Mira, S.-Y. Heo, D. H. Kim, **G. J. Lee**, and Y. M. Song, “Multilayer selective passive daytime radiative cooler optimization utilizing memetic algorithm”, *J. Quant. Spectrosc. Radiat. Transfer*. *Accepted* (2021).

37. J. H. Lee, Y. J. Kim, Y. J. Yoo, S. Chang, **G. J. Lee**, J. H. Ko, K. M. Kang, D. Chanda, and Y. M. Song, “Colored, covert infrared display through hybrid planar-plasmonic cavities”, *Adv. Opt. Mater.* *Accepted* (2021).

36. M. S. Kim, M. S. Kim, **G. J. Lee**, S.-H. Sunwoo, S. Chang, Y. M. Song, and D.-H. Kim, “Bio-inspired artificial vision and neuromorphic image processing devices”, *Adv. Mater. Technol.* *Accepted* (2021).

35. D. H. Kim*, **G. J. Lee***, S.-Y. Heo, I.-S. Kang, and Y. M. Song, “Thermostat property of *Janus* emitter in enclosures”, *Sol. Energy Mater. Sol. Cells*, 230, 111173 (2021).

*equally contributed

34. Y. Lee*, T. Kang*, H. R. Cho*, **G. J. Lee***, O. K. Park, S. Kim, B. Lee, H. M. Kim, G. D. Cha, Y. Shin, W. Lee, M. Kim, H. Kim, Y. M. Song, S. H. Choi, T. Hyeon, D.-H. Kim, “Localized delivery of theranostic nanoparticles and high-energy photons using microneedles-on-bioelectronics”, *Adv. Mater.* 2100425 (2021).

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33. M. H. Kang*, **G. J. Lee***, J. H. Lee, M. S. Kim, Z. Yan, J.-W. Jeong, K.-I. Jang, and Y. M. Song, “Outdoor-useable, Wireless/Battery-free Patch-type Tissue Oximeter with Nano-/Micro-voids Polymer”, *Adv. Sci.*, 2004885 (2021).

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[\[Back cover Article\]](#)

32. M. H. Kang*, **G. J. Lee***, J. H. Yun, and Y. M. Song, “NFC-based Wearable Optoelectronics Working with Smartphone Application for Untact Healthcare”, **Sensors**, 21, 878 (2021).
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31. C. Choi, J. Leem, M. S. Kim, A. Taqieddin, C. Cho, K. W. Cho, **G. J. Lee**, H. Seong, H. J. Bae, Y. M. Song, T. Hyeon, N. Aluru, S. Nam, and D.-H. Kim, “Curved neuromorphic image sensor array using a MoS₂-organic heterostructure inspired by the human visual recognition system”, **Nat. Commun.**, 11, 5934 (2020).
30. **G. J. Lee**, D. H. Kim, S.-Y. Heo, and Y. M. Song, “Spectrally and spatially selective emitters using polymer hybrid spoof plasmonics”, **ACS Appl. Mater. Interfaces**, 12, 53206-53214 (2020).
29. S.-Y. Heo*, **G. J. Lee***, D. H. Kim, Y. J. Kim, S. Ishii, M. S. Kim, T. J. Seok, B. J. Lee, H. Lee, and Y. M. Song, “A *Janus* emitter for passive heat release from enclosures”, **Sci. Adv.**, 6, 36, eabb1906 (2020).
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28. S. Chang, **G. J. Lee**, and Y. M. Song, “Recent Advances in Vertically Aligned Nanowires for Photonics Applications”, **Micromachines**, 11, 726 (2020).
27. M. S. Kim*, **G. J. Lee***, C. Choi*, M. S. Kim*, M. Lee, S. Liu, K. W. Cho, H. M. Kim, M. K. Choi, N. Lu, Y. M. Song, and D.-H. Kim, “Aquatic-vision-inspired camera using a monocentric lens and a silicon nanorod photodiode array”, **Nat. Electronics**, 3, 546-553 (2020).
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26. **G. J. Lee**, K. Park, M. S. Kim, S. Chang, T. J. Seok, H.-G. Park, G. Ju, K. Kim, and Y. M. Song, “Selective and sensitive photon sieve based on III-V semiconductor nanowire forest fabricated by lithography-free process”, **Adv. Opt. Mater.**, 8, 17 (2020).
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25. H. M. Kim, M. S. Kim, **G. J. Lee**, H. J. Jang, and Y. M. Song, “Miniaturized 3D Depth Sensing-Based Smartphone Light Field Camera”, **Sensors**, 20, 2129 (2020).
24. **G. J. Lee**, H. M. Kim, and Y. M. Song, “Design and Fabrication of Microscale, Thin-film Silicon Solid Immersion Lenses for Mid-Infrared Application”, **Micromachines**, 11, 250 (2020).
23. **G. J. Lee**, Y. J. Kim, H. S. Song, D. E. Yoo, D.-W. Lee, I.-S. Kang, and Y. M. Song, “The Facile Implementation of Soft/Tunable Multiband Optical Filters by Stacking Vertical Silicon Nanowire Arrays for Smart Sensing”, **Adv. Intell. Syst.**, 1900072 (2019).
22. H. J. Jang*, Y. J. Kim*, Y. J. Yoo, **G. J. Lee**, M.S. Kim, K. S. Chang, and Y. M. Song, “Double-Sided Anti-Reflection Nanostructures on Optical Convex Lenses for Imaging Applications”, **Coatings**, 9, 404 (2019).
*equally contributed
21. V. Siva, K. W. Park, M. S. Kim, Y. J. Kim, **G. J. Lee**, M. J. Kim and Y. M. Song, “Mapping the Structural, Electrical, and Optical Properties of Hydrothermally Grown Phosphorus-doped ZnO Nanorods for Optoelectronic Device Applications”, **Nanoscale Res. Lett.** 14, 110 (2019).
20. Y. J. Kim, Y. J. Yoo, **G. J. Lee**, D. E. Yoo, D. W. Lee, V. Siva, H. S. Song, I. S. Kang, and Y. M. Song, “Enlarged Color Gamut Representation Enabled by Transferable Silicon Nanowire Arrays on Metal–Insulator–Metal Films”, **ACS Appl. Mater. Interfaces**. 11, 11849 (2019).
19. H. S. Song*, **G. J. Lee***, D. E. Yoo, Y. J. Kim, Y. J. Yoo, D. W. Lee, V. Siva, I. S. Kang and Y. M. Song, “Reflective color filter with precise control of the color coordinate achieved by stacking silicon nanowire arrays onto ultrathin optical coatings”, **Sci. Reports**, 9, 3350 (2019).
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18. H. M. Kim*, M. S. Kim*, **G. J. Lee***, Y. J. Yoo and Y. M. Song, "Large area fabrication of engineered microlens array with low sag height for light-field imaging", **Opt. Express**, 27, 4 (2019)
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17. **G. J. Lee**, Y. J. Kim, H. M. Kim, Y. J. Yoo, Y. M. Song, "Colored, Daytime Radiative Coolers with Thin-Film Resonators for Aesthetic Purposes", **Adv. Opt. Mater.**, 1800707 (2018)
[\[Cover Picture Article\]](#)
[\[Selected as Top 10 Nanotechnology in 2019\]](#)
16. Y. J. Kim, **G. J. Lee**, S. K. Kim, J. W. Min, S. Y. Jeong, Y. J. Yoo, S. H. Lee, Y. M. Song, "Efficient Light Absorption by GaN Truncated Nanocones for High Performance Water Splitting Applications" **ACS Appl. Mater. Interfaces**, 10, 28672 (2018)
15. K. J. Ko, H. B. Lee, H. M. Kim, **G. J. Lee**, S. R. Shin, N. Kumar, Y. M. Song, J. W. Kang, "High-performance, color-tunable fiber shaped organic light-emitting diodes", **Nanoscale**, Advance Article (2018)
14. H. M. Kim*, **G. J. Lee***, M. S. Kim, and Y. M. Song, "Fabrication of Flexible Image Sensor Based on Lateral NIPIN Phototransistors", **J. Vis. Exp.** 136, e57502 (2018)
*equally contributed
13. S. Y. Jeong, H. M. Shin, Y. R. Jo, Y. J. Kim, S.K. Kim, W. J. Lee, **G. J. Lee**, J. S. Song, B. J. Moon, S. H. Seo, H. J. An, S. H. Lee, Y. M. Song, B. J. Kim, M. H. Yoon, and S. H. Lee, "Plasmonic Silver Nanoparticle-Impregnated Nanocomposite BiVO₄ Photoanode for Plasmon-Enhanced Photocatalytic Water Splitting", **J. Phys. Chem. C** 122, 7088 (2018)
12. **G. J. Lee**, C. S. Choi, D.-H. Kim, Y. M. Song, "Bioinspired Artificial Eyes: Optic Components, Digital Cameras, and Visual Prostheses", **Adv. Funct. Mater.** 2018, 1705202 (2018)
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11. C. Choi, M. K. Choi, S. Liu, M. S. Kim, C. Im, O. K. Park, J. Kim, **G. J. Lee**, K. W. Cho, M. Kim, E. Joh, J. Lee, D. Son, S.-H. Kwon, N. L. Jeon, Y. M. Song, N. Lu, and D.-H. Kim, "Human eye-inspired soft optoelectronic device using high-density MoS₂-graphene curved image sensor array", **Nat. Commun.** 8, 15894 (2017)
10. H. S. Song, Y. J. Yoo, **G. J. Lee**, K. S. Chang, Y. M. Song, "Optical Design of Porous ZnO/TiO₂ Films for Highly Transparent Glasses with Broadband Ultraviolet Protection", **J. Nanomater.** 2738015, 8 (2017)
9. Y. J. Yoo, **G. J. Lee**, K. I. Jang, Y. M. Song, "Fabrication of Ultra-thin Color Films with Highly Absorbing Media Using Oblique Angle Deposition", **J. Vis. Exp.**, 126, e56383 (2017)
8. M. S. Kim*, **G. J. Lee***, H. M. Kim, Y. M. Song, "Parametric Optimization of Lateral NIPIN Phototransistors for Flexible Image sensors", **Sensors**, 17, 1774 (2017)
*equally contributed
7. **G. J. Lee**, Y. J. Yoo, and Y. M. Song, "Recent advances in imaging systems and photonic nanostructures inspired by insect eye geometry", **Appl. Spectrosc. Rev.** 1 (2017)
6. **G. J. Lee**, W. I. Nam, and Y. M. Song, "Robustness of an artificially tailored fisheye imaging system with a curvilinear image surface", **Opt. Laser Technol.** 96, 50 (2017)
5. Y. J. Yoo, J. H. Lim, **G. J. Lee**, K.-I. Jang, and Y. M. Song, "Ultra-thin films with highly absorbent porous media fine-tunable for coloration and enhanced color purity", **Nanoscale** 9, 2986-2991 (2017)
[\[Cover Picture Article\]](#)
4. J.-K. Song, D. H. Son, J. M. Kim, Y. J. Yoo, **G. J. Lee**, L. Wang, M. K. Choi, J. W. Yang, M. C. Lee, K. S. Do, J. H. Koo, N. Lu, J. H. Kim, T. H. Hyeon, Y. M. Song, and D.-H. Kim, "Wearable Force Touch Sensor Array Using a Flexible and Transparent Electrode", **Adv. Funct. Mater.** 27, 6,

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3. K. W. Choi, Y. W. Yoon, J. H. Jung, C. W. Ahn, **G. J. Lee**, Y. M. Song, M. J. Ko, H. S. Lee, B. S. Kim, and I.-S. Kang, “Super-Antireflective Structure Films with Precisely Controlled Refractive Index Profile”, *Adv. Opt. Mater.* 5, 3, 1600616 (2016) [[Cover Picture Article](#)]

2. **G. J. Lee** and Y. M. Song, “Theoretical analysis and experiment of subwavelength structure-integrated red AlGaInP light-emitting diodes for uniform field distribution and enhanced light extraction efficiency”, *AIP Adv.* 6, 035104 (2016)

1. H. M. Kim, S. H. Kim, **G. J. Lee**, K. J. Kim and Y. M. Song, “Parametric studies on artificial Morpho butterfly wing scales for optical device applications”, *J. Nanomater.*, 2015, 451834 (2015)

PROCEEDINGS AND PRESENTATIONS (INTERNATIONAL)

14. **G. J. Lee**, M. S. Kim, C. Choi, M. S. Kim, D.-H. Kim, and Y. M. Song, “Ultra-slim, wide field-of-view single lens cameras with designs inspired by an aquatic animal”, 2020 Frontiers in Optics, 2020, Washington, USA, September 2020.

[[Oral presentation](#)]

[[Selected as Robert S. Hilbert Memorial Student Travel Grant by OSA](#)]

13. **G. J. Lee**, S.-Y. Heo, D. H. Kim, Y. J. Kim, M. S. Kim, and Y. M. Song, “*Janus* thermal emitter by spoof surface plasmon polariton for radiative cooling”, 2020 Frontiers in Optics, 2020, Washington, USA, September 2020.

[[Oral presentation](#)]

12. **G. J. Lee**, Y. J. Kim, D. E. Yoo, D.-W. Lee, I.-S. Kang, and Y. M. Song, “Structural color systems with the combinations of silicon nanowire arrays and ultra-thin 1D resonators”, 2019 MRS Fall meeting, 2019, Boston, USA, December 2019.

11. **G. J. Lee**, K. Park, G. W. Ju, and Y. M. Song, “Gallium Arsenide nanowires for selective light absorption by lithography-free process”, 2019 MRS Fall meeting, 2019, Boston, USA, December 2019.

10. S.-Y. Heo, **G. J. Lee** and Y. M. Song, “Perfect selective emitter with far infrared photonic structure”, Conference on Lasers and Electro-Optics (CLEO) 2019, San Jose, USA, May 2019

[[Oral presentation](#)]

9. **G. J. Lee**, S.-Y. Heo, and Y. M. Song, “Microscale-patterned colored passive radiative cooler”, Conference on Lasers and Electro-Optics (CLEO) 2019, San Jose, USA, May 2019

8. **G. J. Lee**, S.-Y. Heo, and Y. M. Song, “High efficient metallic heat sink supported by radiative cooling photonic structures”, 2018 MRS Fall meeting, 2018, Boston, USA, December 2018.

[[Oral presentation](#)]

7. **G. J. Lee**, S.-Y. Heo, and Y. M. Song, “Heat reduction in wearable devices by integrating radiative photonic structure and thin metal film”, The 5th International Conference on Electronic Materials and Nanotechnology (ENGE) for Green environment 2018, Jeju-island, Korea, November 2018

[[Selected as Best poster](#)]

6. **G. J. Lee**, H. M. Kim, Y. J. Kim, and Y. M. Song, “Passive radiative cooling structure with vivid colors”, Conference on Lasers and Electro-Optics (CLEO) 2018, San Jose, USA, May 2018

[[Oral presentation](#)]

5. **G. J. Lee** and Y. M. Song, “Parametric Studies on Wide Field of View Imaging Systems with Curved Image Sensors”, Frontiers in Optics, Washington D.C., USA September 2017

4. **G. J. Lee**, M. S. Kim, and Y. M. Song, “Characterization of a laterally doped single photodiode for flexible image sensor”, NANOPIA, Changwon, Korea, November 2016
3. **G. J. Lee** and Y. M. Song, “Electromagnetic characteristics of serpentine shaped metamaterial in terahertz region”, Intentional Conference on Numerical Simulation of Optoelectronic Devices (NUSOD), Sydney, Australia, July 2016
2. H. G. Park, **G. J. Lee**, and Y. M. Song, “Numerical simulation of near-field focusing phenomena depending on the radius of curvature and the refractive index of microlens”, Intentional Conference on Numerical Simulation of Optoelectronic Devices (NUSOD), Sydney, Australia, July 2016
1. **G. J. Lee**, J. H. Lee, and Y. M. Song, “Theoretical modeling of subwavelength structure integrated LEDs for enhanced extraction efficiency and uniform field distribution”, Intentional Conference on Numerical Simulation of Optoelectronic Devices (NUSOD), Taipei, Taiwan, September 2015

PATENTS

16. Y. M. Song, M. H. Kang, **G. J. Lee**, “Patch-type wearable device with passive radiative coolers”, Korea patent pending, 2020-0098042 (2020).
15. Y. M. Song, M. S. Kim, **G. J. Lee**, H. M. Kim, “Camera device using a single aperture”, Korea patent pending, 2020-0028579 (2020).
14. Y. M. Song, **G. J. Lee**, S.-Y. Heo, “Passive radiant cooling panel with *Janus* characteristics with different upper and lower heat radiation characteristics”, Korea patent pending, 2020-0024454 (2020).
[\[Patented technology transfer to ‘FOEL Inc.’\]](#)
13. Y. M. Song, J. H. Lee, **G. J. Lee**, M. S. Kim, H. M. Kim, “Manufacturing method of mold for manufacturing micro lens array”, Korea patent, 10-2147280 (2020).
12. Y. M. Song, M. S. Kim, **G. J. Lee**, H. M. Kim, “Object movement detection device, method, computer-readable recording medium and computer program”, Korea patent, 10-2147229 (2020).
11. Y. M. Song, **G. J. Lee**, Y. J. Joo, Y. J. Kim, “Passive radiating cooling structure”, Korea patent pending, 2019-0057225 (2019).
[\[Patented technology transfer to ‘FOEL Inc.’\]](#)
10. Y. M. Song, Y. J. Kim, **G. J. Lee**, Y. J. Yoo, “Coloration structure in which polymer thin film is laminated and manufacturing method of polymer thin film”, Korea patent pending, 2019-0024393 (2019).
9. Y. M. Song, S. I. Choi, H. M. Kim, B. H. Park, D. S. Lee, M. S. Kim, **G. J. Lee**, “Low Curvature Polymer Lens Array Manufacturing Method”, Korea patent pending, 2019-0013030 (2019).
8. Y. M. Song, M. S. Kim, **G. J. Lee**, J. H. Jung, H. J. Jang, “Movement Detection Device and Movement Detection Method Using the Same”, Korea patent pending, 2018-0162144 (2018).
7. Y. M. Song, H. M. Kim, **G. J. Lee**, “Micro-Moving Sensor with Wide Viewing Angle”, Korea patent pending, 2017-0122810 (2017).
6. Y. M. Song, J. W. Lee, C. S. Lee, Y. J. Yoo, **G. J. Lee**, J. H. Lee, “Transparent substrate for vehicle and its manufacturing method”, Korea patent pending, 2017-0109898 (2017).

5. Y. M. Song, **G. J. Lee**, G. W. Ju, “Manufacturing method of micro lens”, Korea patent, **10-2017-0027309** (2017)
4. Y. M. Song, **G. J. Lee**, “Non-power wavelength conversion device converting infrared or ultraviolet light into visible light”, Korea patent, **1018336220000** (2016)
3. Y. M. Song, M. G. Shin, **G. J. Lee**, “Multi-band filter and image device including the same”, Korea patent, **1018184830000** (2016)
2. Y. M. Song, H. G. Park, **G. J. Lee**, “Endoscope apparatus”, Korea patent, **1018184830000**, (2016)
1. Y. M. Song, **G. J. Lee**, “Photovoltaic modules”, Korea patent, **10-1653593** (2015)

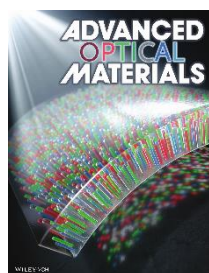
ACADEMIC SERVICES

Reviewer for **Applied Optics**, **Applied Spectroscopy Reviews**
 Guest editors for **Micromachines**
 Chairs for **IUMRS-ICA 2021**

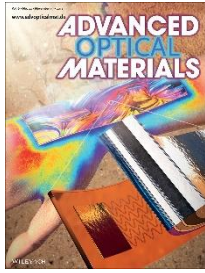
NEWS ARTICLES (INTERNATIONAL)

1. *Cooling in color*, Nanowerk (<https://www.nanowerk.com/spotlight/spotid=51011.php>) (Sep. 06, 2018).
2. *Exploring the optical behavior of highly dense and randomly distributed nanowire arrays*, Nanowerk (<https://www.nanowerk.com/spotlight/spotid=55429.php>) (June 18, 2020)
3. *Fish-eye-inspired wide field-of-view camera*, Nature research (<https://devicematerial.scommunity.nature.com/posts/fish-eye-inspired-wide-field-of-view-camera>) (June 23, 2020)
4. *A small, wide-field-of-view camera built based on fish eyes*, TechXplore (<https://techxplore.com/news/2020-07-small-wide-field-of-view-camera-built-based.html>) (July 1, 2020)
5. *An aquatic-eye inspired miniature camera*, News & Views in Nature Electronics (<https://www.nature.com/articles/s41928-020-00477-6>) (Sep. 4, 2020)
6. *Passive cooling of enclosed spaces*, Nanowerk (<https://www.nanowerk.com/spotlight/spotid=56055.php>) (Sep. 7, 2020)
7. *A Janus emitter for passive heat release from enclosures*, Phys.org (<https://phys.org/news/2020-09-janus-emitter-passive-enclosures.html>) (Sep. 9, 2020)
8. *Beat The Heat: Novel Passive Cooling Device For Surfaces And Enclosed Spaces*, SCIENMAG (<https://scienmag.com/beat-the-heat-novel-passive-cooling-device-for-surfaces-and-enclosed-spaces/>) (Oct. 7, 2020)

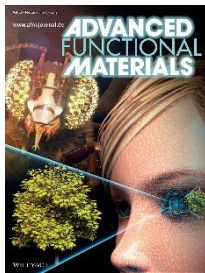
COVER PICTURES



We report the theoretical and experimental demonstrations of a selective and sensitive photon sieve based on III–V semiconductor nanowire forests. The nanoscopic photonic phenomena of nanowire forests, which have been barely studied, are important for various applications such as physically unclonable functions and retinal prostheses. The cover image depicts the photon sieving effect by the implemented III–V nanowire-based photon sieve. **Adv. Opt. Mater.** **8(17)**, 2020



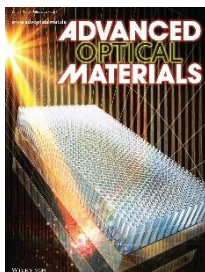
The cover image shows the demonstration of a daytime radiative cooler with aesthetic purposes. This colored passive radiative cooler is capable of generating potential cooling power while maintaining primary colors, based on a thin-film optical resonator beneath an efficient thermal emitter. The cover depicts the cooling effect and aesthetic appearance of the radiative cooler used for a wearable device. **Adv. Opt. Mater. 6(22), 2018**



Vision systems in nature are highly attractive in the field of imaging devices due to their intriguing optical features. Bioinspired imaging systems based on soft materials/device designs, ultrathin electronics, and deformable optoelectronics have copied natural strategies. **Adv. Func. Mater. 28(24), 2018**



We demonstrate ultra-thin, fine-tunable optical coatings with enhanced color purity based on highly absorbent porous media on a metal substrate. We show that the color range provided by these ultra-thin film coatings can be extended by making the absorptive dielectric layer porous. Angle independent reflection properties, and the applicability of such porous Ge on various metal substrates, indicate the strength of these concepts. **Nanoscale 9(9), 2017**



The fabrication of super-antireflective structure films is presented, which exhibit an unprecedented refractive index profile and eliminate reflections almost completely for any angle of incidence with extreme precision using a newly developed square voltage pulse anodization. The application of the films developed on polymer solar cells demonstrates that the efficiencies of the film increase to 12.08% at 70°. **Adv. Opt. Mater. 5(3), 2017**