

Curriculum Vitae

SEUNGMIN NAM

Assistant Professor

Major in Semiconductor and Display Engineering, Hanyang University ERICA
55 Hanyangdaehak-ro, Ansan 15588, Gyeonggi-do, Korea

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RESEARCH INTEREST

- Stretchable & wavelength-tunable photonic applications
- Shape deformable electroactive soft actuators
- Smart window & dimming control devices

EDUCATION

- | | | |
|---------------------|--|-----------------------|
| Ph.D. | POSTECH, Korea
Department of Electrical Engineering
Thesis: Electrical Multi-wavelength Control in Chiral Liquid Crystal Elastomers for Tunable Photonic Applications
<i>Advisor: Prof. Su Seok Choi</i> | Sep. 2021 – Aug. 2024 |
| M.S. | Pusan National University, Korea
Department of Electrical Engineering and Computer Science
Thesis: Design of Guest-Host Liquid Crystal Cell for Transmittance Control Device
<i>Advisor: Prof. Tae-Hoon Yoon</i> | Mar. 2018 – Feb. 2020 |
| B.S.
2018 | Pusan National University, Korea
Department of Electrical Engineering | Mar. 2013 – Feb. |

EXPERIENCE

Assistant Professor

School of Semiconductor Convergence Engineering, Hanyang University ERICA (Mar. 2026 – present)

Assistant Professor

Department of electrical engineering, Chosun University (Mar. 2025 – Feb. 2026)

Postdoctoral Researcher

Department of electrical engineering, POSTECH (Aug. 2024 – Feb. 2025)

Researcher

Department of electrical engineering, POSTECH (Sep. 2020 – Aug. 2021)

PUBLICATION

*Corresponding author

1. Hyerin Kim, Jung Woo Park, Chaeyeong Yun, Wontae Jung, **Seungmin Nam**, Minjae Kang, and Su Seok Choi*, “Low-Voltage Operating Multi-Color Tunable Chiral Liquid Crystal Laser with Continuous and Broadband Emission From a Single Pixel” *Laser Photonics Rev.*, 0, e02740 (2025). [IF: 10.0] [JCR 7.6%]
[\[Selected as Inside Back Cover \(Link\)\]](#)
2. **Seungmin Nam**, Seohyun Woo, Ji Yoon Park, and Su Seok Choi*, “Programmable optical encryption using thickness-controlled stretchable chiral liquid crystal elastomers” *Light Sci. Appl.* 14, 136, 2025. [IF: 20.6] [JCR 2.9%]
3. Chaeyeong Yun, **Seungmin Nam**, Hyerin Kim, Wontae Jung, and Su Seok Choi*, “Advanced Optical Encryption using Tunable Color and Polarization Separation in In-situ Polymerized Chiral Liquid Crystals” *ACS Appl. Mater. Interfaces*. 17, 12532, 2025 [IF: 8.3] [JCR 15.4%]
4. Ji Yoon Park, Jun Hyuk Shin, In Pyo Hong, **Seungmin Nam**, and Su Seok Choi*, “Dynamic bendable display with sound integration using asymmetric strain control of actuators with flexible OLED” *npj Flex. Electron.* 9, 25, 2025. [IF: 12.3] [JCR 1.8%]
5. Jun Hyuk Shin, Hak Jun Yang, Ji Yoon Park, Sang Hyun Han, Dongjun Kim, **Seungmin Nam**, and Su Seok Choi*, "Optimized and Uniform Strain Control in Intrinsic Stretchable Mechanochromic Materials with Color- and Polarization-Separating Encryption Using Kirigami Cuts and Rigid Strain-Stoppers" *Adv. Funct. Mater.* 2422772, 2024. [IF: 18.5] [JCR 4.1%]
6. Sang Hyun Han, Jun Hyuk Shin, Hak Jun Yang, **Seungmin Nam**, Ji Yoon Park, and Su Seok Choi*, "Optical Visualization of Stretchable Serpentine Interconnects using Chiral Liquid Crystal Elastomers" *Adv. Sci.* 12, 2408346, 2025. [IF: 18.5] [JCR 6.5%]
[\[Selected as Inside Back Cover \(Link\)\]](#)
7. **Seungmin Nam**, Wontae Jung, Jun Hyuk Shin, and Su Seok Choi*, “Omnidirectional Color Wavelength Tuning of Stretchable Chiral Liquid Crystal Elastomers” *Light Sci. Appl.* 13, 14, 2024. [IF: 20.6] [JCR 2.9%]
[\[Featured in Light: Science & Applications News & Views \(Link\)\]](#)
8. Jun Hyuk Shin, **Seungmin Nam**, Sang Hyun Han, Ji Yoon Park, Chaehyun Kwon, and Su Seok Choi*, “Matrix-Driving Stretchable Structural Colors in Multi-Pixels Operation Using Chiral Liquid Crystal Elastomers” *Adv. Mater. Technol.* 8, 2301322, 2023. [IF: 6.4] [JCR 22.7%]
[\[Selected as Inside Back Cover \(Link\)\]](#)
9. Chaehyun Kwon, **Seungmin Nam**, Sang Hyun Han, and Su Seok Choi*, “Optical Characteristics of Stretchable Chiral Liquid Crystal Elastomer under Multiaxial Stretching” *Adv. Funct. Mater.* 33, 2304506, 2023. [IF: 18.5] [JCR 4.1%]
[\[Selected as Inside Back Cover \(Link\)\]](#)
10. Dahee Wang, **Seungmin Nam**, Wontae Jung, Hak Jun Yang, and Su Seok Choi*, “Electrically Wavelength-Controllable Color Filters with High Optical Transmittance Using Heterogeneous Chiral Liquid Crystals” *Adv. Opt. Mater.* 11, 202202906, 2023. [IF: 8.0] [JCR 8.0%]
[\[Selected as Back Cover \(Link\)\]](#)
11. **Seungmin Nam**, Dahee Wang, Chaehyun Kwon, Sang Hyun Han, and Su Seok Choi*, “Biomimetic Multicolor-Separating Photonic Skin using Electrically Stretchable Chiral Photonic Elastomers” *Adv. Mater.* 35, 2302456, 2023. [IF: 27.4] [JCR 1.90%]
[\[Selected as Inside Back Cover \(Link\)\]](#)

12. Jaewook Lee, **Seungmin Nam**, and Su Seok Choi*, “Design of chiral guest-host liquid crystals for a transmittance-tunable smart window” *Opt. Mater. Express* 12, 2568, 2022. [IF: 2.8] [JCR 35.7%]
[\[Selected as Front Cover \(Link\)\]](#)
13. Dahee Wang, **Seungmin Nam**, and Su Seok Choi*, “Analytical design of optical color filter using bi-layered chiral liquid crystal” *Opt. Mater. Express* 12, 949, 2022. [IF: 2.8] [JCR 35.7%]
14. **Seungmin Nam**, Dahee Wang, Gyubin Lee, and Su Seok Choi*, “Broadband wavelength tuning of electrically stretchable chiral photonic gel” *Nanophotonics* 11, 2139, 2022. [IF: 6.5] [JCR 11.3%]
15. Seung-Won Oh, **Seungmin Nam**, Sang-Hyeok Kim, Tae-Hoon Yoon*, and Wook-Sung Kim, “Self-regulation of infrared using a liquid crystal mixture doped with push-pull azobenzene for energy-saving smart windows” *ACS Appl. Mater. Interfaces* 13, 5028, 2021. [IF: 8.3] [JCR 15.4%]
16. **Seungmin Nam**, Seung-Won Oh, Sang-Hyeok Kim, Jae-Won Huh, Eunjung Lim, Jinhong Kim, and Tae-Hoon Yoon*, “Parameter Space Design of a Guest-Host Liquid Crystal Device for Transmittance Control” *Crystals* 9, 63, 2019. [IF: 2.4] [JCR 28.8%]
17. Seong-Min Ji, Seung-Won Oh, Young-Seo Jo, **Seungmin Nam**, Sang-Hyeok Kim, Jae-Won Huh, Eunjung Lim, Jinhong Kim, and Tae-Hoon Yoon*, “Optimization of dye mixing for achromatic transmittance control with a dye-doped cholesteric liquid crystal cell” *Dyes Pigm.* 160, 172, 2019. [IF: 4.1] [JCR 8.3%]

CONFERENCE

1. **Seungmin Nam*** “Stretchable and Electrically Reconfigurable Photonic Devices Enabled by Stimuli-Responsive Soft Materials”, in The Korea Flexible and Printed Electronics Society (KFPE 2026), Suwon (Korea, 2026). [\[Invited\]](#)
2. **Seungmin Nam*** “Dynamic Structural Color Control Using Chiral Liquid Crystal Elastomers”, in Polymer Society of Korea-Fall Meeting (PSK 2025-Fall), Busan (Korea, 2025). [\[Invited\]](#)
3. **Seungmin Nam***, Seohyun Woo, Ji Yoon Park, and Su Seok Choi “Reconfigurable Multi-Wavelength Photonic Encryption via Thickness-Modulated Chiral Liquid Crystal Elastomer Electrically tunable photonic devices enabled by soft-functional materials”, in International Meeting on Information Display (IMID 2025), Busan (Korea, 2025)
4. **Seungmin Nam***, Seohyun Woo, Ji Yoon Park, and Su Seok Choi “Reconfigurable Multi-Wavelength Photonic Encryption via Thickness-Modulated Chiral Liquid Crystal Elastomer”, in International Meeting on Information Display (IMID 2025), Busan (Korea, 2025)
5. Hyerin Kim, Jung Woo Park, Chaeyeong Yun, **Seungmin Nam**, Wontae Jung, and Su Seok Choi* “Electrothermally Tunable Cholesteric Liquid Crystal Lasers”, in International Meeting on Information Display (IMID 2025), Busan (Korea, 2025)
6. Chaeyeong Yun, **Seungmin Nam**, Hyerin Kim, Wontae Jung, and Su Seok Choi* “Tunable Multicolor and Polarization-Selective Optical Encryption based on In-Situ Polymerized Chiral Liquid Crystals”, in International Meeting on Information Display (IMID 2025), Busan (Korea, 2025)
7. **Seungmin Nam*** “Electrically tunable photonic devices enabled by soft-functional materials”, in Optics and Photonics Congress (OPC 2025), Jeju (Korea, 2025) [\[Invited\]](#)
8. Sang Hyun Han, Jun Hyuk Shin, Hak Jun Yang, **Seungmin Nam**, Ji Yoon Park, and Su Seok Choi* “Mechano-Optical Visualization of Strain Distribution in Stretchable Serpentine Structures Using Chiral Liquid Crystal Elastomers”, in Korean Meeting on Information Display (KMID 2025), Gangneung (Korea, 2025). [\[Best paper award\]](#)

9. Chan-Hee Han, Wonbeen Do, Dongjun Kim, **Seungmin Nam**, Chaeyeong Yun, and Su Seok Choi* “Electrically Switchable Dye-doped Chiral Liquid Crystal Films with Multi-Pixel Electrodes for Independent Operation”, in Materials Research Society of Korea, Fall Conference (MRSK 2024), Busan (Korea, 2024).
10. Jun Hyuk Shin, Ji Yoon Park, **Seungmin Nam**, Sang Hyun Han, Hak Jun Yang, and Su Seok Choi* “Extrinsic stretchable methods for strain control using chiral liquid crystal elastomers”, in Materials Research Society of Korea, Fall Conference (MRSK 2024), Busan (Korea, 2024).
11. Chaeyeong Yun, **Seungmin Nam**, Hyerin Kim, Wontae Jung, and Su Seok Choi* “Multi-Modes Optical Encryption using Wavelength and Polarization Tunable Chiral Liquid Crystals”, in Materials Research Society of Korea, Fall Conference (MRSK 2024), Busan (Korea, 2024). **[Best paper award]**
12. Wontae Jung, **Seungmin Nam**, Chaeyeong Yun, Jung Woo Park, and Su Seok Choi* “Optical Characteristics of Thermally Tunable Chiral Liquid Crystals within Chiral Polymer Templates”, in Materials Research Society of Korea, Fall Conference (MRSK 2024), Busan (Korea, 2024).
13. **Seungmin Nam**, Wontae Jung, Jun Hyuk Shin, and Su Seok Choi*, “Bidirectional Wavelength Tuning in Stretchable Chiral Liquid Crystal Elastomers using Multi-modal Soft Actuators”, in Polymer Society of Korea (PSK 2024), Busan (Korea, 2024).
14. Jun Hyuk Shin, Hak Jun Yang, Ji Yoon Park, Sang Hyun Han, Dong Jun Kim, **Seungmin Nam**, and Su Seok Choi*, “Strategic Designs for Strain Control Using Mechanochromism”, in Polymer Society of Korea (PSK 2024), Busan (Korea, 2024).
15. **Seungmin Nam**, Wontae Jung, Jun Hyuk Shin, and Su Seok Choi* “Bidirectional Wavelength Tunable Structural Color using Stretchable Chiral Photonic Elastomers on Multi-Modal Soft Actuators”, in International Meeting on Information Display (IMID 2024), Jeju (Korea, 2024).
16. Jun Hyuk Shin, Hak Jun Yang, Ji Yoon Park, Sang Hyun Han, **Seungmin Nam**, and Su Seok Choi* “Strain Control for Uniform Distribution Using Mechanochromism”, in International Meeting on Information Display (IMID 2024), Jeju (Korea, 2024).
17. Hyerin Kim, Chaeyeong Yun, **Seungmin Nam**, Wontae Jung, and Su Seok Choi* “Pixelated Polymer Stabilized Cholesteric Liquid Crystal Cavity for Fluorescent Dye Gain”, in International Meeting on Information Display (IMID 2024), Jeju (Korea, 2024).
18. Chaeyeong Yun, **Seungmin Nam**, Wontae Jung, Hyerin Kim, and Su Seok Choi*, “Tunable, Patternable, and Polarization Controllable Structural Colors using Chiral Liquid Crystals”, in International Meeting on Information Display (IMID 2024), Jeju (Korea, 2024).
19. Wontae Jung, **Seungmin Nam**, Chaeyeong Yun, and Su Seok Choi* “Design of Thermally Tunable Chiral Liquid Crystals within Chiral Polymer Template”, in International Meeting on Information Display (IMID 2024), Jeju (Korea, 2024).
20. **Seungmin Nam**, Dahee Wang, Chaehyun Kwon, Sang Hyun Han, and Su Seok Choi*, “Biomimetic Multi-Color Control utilizing Structural Color of Chiral Liquid Crystal Elastomers”, in The 24th Korea Liquid Crystal Conference (KLCC 2024), Busan (Korea, 2024).
21. Wontae Jung, **Seungmin Nam**, Chaeyeong Yun, and Su Seok Choi, “Programmable structural color patterns using in-situ polymerization of thermally tunable liquid crystal”, in The 24th Korea Liquid Crystal Conference (KLCC 2024), Busan (Korea, 2024).
22. Chaeyoung Yun, **Seungmin Nam**, Wontae Jung, and Su Seok Choi*, “Investigation of Chiral Polymer Templates for Thermally Tunable Optical Filters”, in The 24th Korea Liquid Crystal Conference (KLCC 2024), Busan (Korea, 2024).

23. **Seungmin Nam**, Chaehyun Kwon, Sang Hyun Han, Dahee Wang, and Su Seok Choi*, “Biomimetic Multi-Color Control of Stretchable Photonic Elastomer”, in Materials Research Society of Korea, Fall Conference (MRSK 2023), Gyeongju (Korea, 2023). [\[Best paper award\]](#)
24. Jun Hyuk Shin, **Seungmin Nam**, Sang Hyun Han, Ji Yoon Park, Chaehyun Kwon, and Su Seok Choi* “Uniform Multi-Pixel-Driven Structural Colors Realized Using Electrically Stretchable Chiral Liquid Crystal Elastomers”, in Materials Research Society of Korea, Fall Conference (MRSK 2023), Gyeongju (Korea, 2023).
25. Chaeyeong Yun, **Seungmin Nam**, Chaehyun Kwon, Wontae Jung, and Su Seok Choi* “Optimization of Guest-host Liquid Crystal for Eyewear Devices”, in Materials Research Society of Korea, Fall Conference (MRSK 2023), Gyeongju (Korea, 2023). [\[Best paper award\]](#)
26. Wontae Jung, **Seungmin Nam**, Chaeyeong Yun, and Su Seok Choi* “Wavelength Control of Chiral Liquid Crystals with Polymer Templates for Tunable Optical Filters”, in Materials Research Society of Korea, Fall Conference (MRSK 2023), Gyeongju (Korea, 2023).
27. **Seungmin Nam**, Chaehyun Kwon, Sang Hyun Han, Dahee Wang, and Su Seok Choi*, “Stretchable Multi-Color Separations Using Structural Colors of Chiral Liquid Crystal Elastomer”, in International Meeting on Information Display (IMID 2023), Busan (Korea, 2023).
28. Jun Hyuk Shin, **Seungmin Nam**, Sang Hyun Han, Ji Yoon Park, Chaehyun Kwon, and Su Seok Choi*, “Uniform Switching Control of Electrically Stretchable Structural Color”, in International Meeting on Information Display (IMID 2023), Busan (Korea, 2023).
29. Chaeyeong Yun, **Seungmin Nam**, Chaehyun Kwon, Wontae Jung, and Su Seok Choi*, “Transmittance Control of Guest-Host Liquid Crystal for Eyewear Devices”, in International Meeting on Information Display (IMID 2023), Busan (Korea, 2023).
30. Wontae Jung, **Seungmin Nam**, Dahee Wang, Chaeyeong Yun, and Su Seok Choi*, “Chiral Liquid Crystal with Polymer Template for Tunable Photonic Band Filter”, in International Meeting on Information Display (IMID 2023), Busan (Korea, 2023).
31. Chaehyun Kwon, **Seungmin Nam**, Sang Hyun Han, and Su Seok Choi*, “A Study on Optical Responses in Chiral Liquid Crystal Elastomers under Uniaxial and Biaxial Stretching”, in International Meeting on Information Display (IMID 2023), Busan (Korea, 2023). [\[Best paper award\]](#)
32. **Seungmin Nam**, Dahee Wang, and Su Seok Choi*, “Electrically Stretchable Photonic Wavelength Band Control using a Hybrid Device with Chiral Liquid Crystal Elastomers and Dielectric Soft Actuator”, in The Korea Flexible and Printed Electronics Society (KFPE 2023), Yeosu (Korea, 2023).
33. Wontae Jung, **Seungmin Nam**, Dahee Wang, Chaeyeong Yun, and Su Seok Choi*, “Study of Temperature-Responsive Chiral Polymer Template”, in The Korea Flexible and Printed Electronics Society (KFPE 2023), Yeosu (Korea, 2023).
34. Jun Hyuk Shin, **Seungmin Nam**, Sang Hyun Han, Ji Yoon Park, Chaehyun Kwon, and Su Seok Choi*, “Uniform Control of Wavelength Tunable and Stretchable Chiral Gels”, in The Korea Flexible and Printed Electronics Society (KFPE 2023), Yeosu (Korea, 2023). [\[Best paper award\]](#)
35. **Seungmin Nam**, Dahee Wang, and Su Seok Choi*, “Photonic Band Tuning of Chiral Liquid Crystalline Elastomer using Electrically Stretchable Soft Actuator”, in The 23th Korea Liquid Crystal Conference (KLCC 2023), Samcheok (Korea, 2023).
36. Chaehyun Kwon, **Seungmin Nam**, and Su Seok Choi*, “Comparison of Optical Properties Change between Uniaxially Stretched and Biaxially Stretched Cholesteric Liquid Crystal Elastomers”, in The 23th Korea Liquid Crystal Conference (KLCC 2023), Samcheok (Korea, 2023). [\[Best paper award\]](#)

37. Wontae Jung, **Seungmin Nam**, Dahee Wang, and Su Seok Choi*, “Effect of Polymer Template on Chiral Liquid Crystals under Temperature Change”, in The 23th Korea Liquid Crystal Conference (KLCC 2023), Samcheok (Korea, 2023).
38. **Seungmin Nam**, Jaewook Lee, and Su Seok Choi*, “Switching Parameter Optimization for Improved Chiral Guest-host Liquid Crystals Smart Window”, in Polymer Society of Korea (PSK 2022), Daegu (Korea, 2022).
39. Wontae Jung, **Seungmin Nam**, Dahee Wang, and Su Seok Choi*, “Optical Characteristics of Chiral Liquid Crystals with Polymer Templates”, in Polymer Society of Korea (PSK 2022), Daegu (Korea, 2022).
40. Dahee Wang, **Seungmin Nam**, and Su Seok Choi*, “Optical Color Filter Using Chiral Liquid Crystal Polymer Film”, in Polymer Society of Korea (PSK 2022), Daegu (Korea, 2022).
41. Chaehyun Kwon, **Seungmin Nam**, and Su Seok Choi*, “Optical Properties of Biaxially Stretched Chiral Photonic Elastomer”, in Polymer Society of Korea (PSK 2022), Daegu (Korea, 2022).
42. **Seungmin Nam**, Dahee Wang, and Su Seok Choi*, “Electrically Stretchable Color Change Using Chiral Photonic Gels”, in International Meeting on Information Display (IMID 2022), Busan (Korea, 2022).
43. Dahee Wang, **Seungmin Nam**, and Su Seok Choi*, “Analytical Design of Double Layered Chiral Liquid Crystal Color Filter”, in International Meeting on Information Display (IMID 2022), Busan (Korea, 2022).
44. Chaehyun Kwon, **Seungmin Nam**, and Su Seok Choi*, “Study of Circular Polarization Change in Chiral Liquid Crystal Elastomer Under Uniaxial Stretching”, in International Meeting on Information Display (IMID 2022), Busan (Korea, 2022).
45. Wontae Jung, **Seungmin Nam**, and Su Seok Choi*, “Study of Perovskite Nanocrystal Dispersion in Chiral Liquid Crystals”, in International Meeting on Information Display (IMID 2022), Busan (Korea, 2022).
46. Jaewook Lee, **Seungmin Nam**, and Su Seok Choi*, “Improved Optical Transmittance Control of Dye-Doped Liquid Crystals Using Polarization-Independent Molecular Rotation”, in International Meeting on Information Display (IMID 2022), Busan (Korea, 2022).
47. **Seungmin Nam**, Dahee Wang, and Su Seok Choi*, “Electro-mechano-optical Characteristics of Chiral Photonic Gels,” in Polymer Society of Korea (PSK 2022), Daejeon (Korea, 2022).
48. Dahee Wang, **Seungmin Nam**, and Su Seok Choi*, “Double Stacked Structure of Cholesteric Liquid Crystals,” in Polymer Society of Korea (PSK2022), Daejeon (Korea, 2022).
49. Dahee Wang, **Seungmin Nam**, and Su Seok Choi*, “Optical Characteristics of Double Layered Chiral Liquid Crystal,” in OptoWin 2022, Daejeon (Korea, 2022).
50. **Seungmin Nam**, Dahee Wang, and Su Seok Choi*, “Optical Characteristics of Deformable Photonic Gels based on Chiral Nematic Liquid Crystal Polymers,” in Photonics Conference (PC 2021), Pyeongchang (Korea, 2021).
51. **Seungmin Nam**, Dahee Wang, and Su Seok Choi*, “Mechanochromic Response Behaviors of Stretchable Chiral Photonic Gels,” in Polymer Society of Korea (PSK 2021), Gyeongju (Korea, 2021).
52. **Seungmin Nam**, Dahee Wang, and Su Seok Choi*, “Optical characteristics of stretchable chiral photonic film based on chiral liquid crystal via in situ photopolymerization,” in International Meeting on Information Display (IMID 2021), Seoul (Korea, 2021).
53. Dahee Wang, **Seungmin Nam**, and Su Seok Choi*, “Analytical Study of Bi-Layered Chiral Liquid Crystal Photonic Band Filter,” in International Meeting on Information Display (IMID 2021), Seoul (Korea, 2021).
54. **Seungmin Nam**, Seung-Won Oh, Jae-Won Huh, Seong-Min Ji, Eunjung Lim, Jinhong Kim, and Tae-Hoon Yoon*, “Optimization of Color and Transmittance in a Dye-doped Chiral-nematic Liquid Crystal Cell,” in International Display Workshop (IDW 2019), Sapporo (Japan, 2019).

55. Jeong-Ho Seo, **Seungmin Nam**, Seung-Won Oh, Seong-Min Ji, Eunjung Lim, Jinhong Kim, and Tae-Hoon Yoon*, “Analysis of Optical Performance Degradation in an Ion-doped Liquid Crystal Cell,” in International Display Workshop (IDW 2019), Sapporo (Japan, 2019).
56. **Seungmin Nam**, Seung-Won Oh, Sang-Hyeok Kim, Jae-Won Huh, Eunjung Lim, Jinhong Kim, and Tae-Hoon Yoon*, “Design of a dye-doped liquid crystal cell with a constant transmittance-difference contour map,” in EuroDisplay 2019, Minsk (Belarus, 2019).
57. **Seungmin Nam**, Seung-Won Oh, Sang-Hyeok Kim, Jae-Won Huh, Eunjung Lim, Jinhong Kim, and Tae-Hoon Yoon*, “Design method for transmittance control of a guest-host liquid crystal cell,” in OptoWin 2019, Hoengseong (Korea, 2019).
58. **Seungmin Nam**, Seung-Won Oh, Sang-Hyeok Kim, Jae-Won Huh, and Tae-Hoon Yoon*, “Design of guest-host liquid crystal devices for transmittance control,” in The 4th Asian Conference on Liquid Crystals (ACLC 2019), Shenzhen (China, 2019).
59. **Seungmin Nam**, Seung-Won Oh, Sang-Hyeok Kim, Jae-Won Huh, Eunjung Lim, Jinhng Kim, and Tae-Hoon Yoon*, “Parameter space design of a guest-host liquid crystal device,” in The 20th Korea Liquid Crystal Conference (KLCC 2019), Yeosu (Korea, 2019). **[Best paper award]**
60. Young-Seo Jo, Tae-Hoon Choi, Jae-Won Huh, Seong-Min Ji, **Seungmin Nam**, and Tae-Hoon Yoon*, “Switching of an LC Mixture without Ion Dopants between Transparent and Translucent States by the Electro-hydrodynamic Effect,” in International Display Workshop (IDW 2018), Nagoya (Japan, 2018).
61. **Seungmin Nam**, Seong-Min Ji, Seung-Won Oh, Young-Seo Jo, Sang-Hyeok Kim, Jae-Won Huh, and Tae-Hoon Yoon*, “Optimization of dye mixing for true black color in a dye-doped cholesteric liquid crystal cell,” in Optics and Photonics Congress (OPC 2018), Busan (Korea, 2018).
62. Seong-Min Ji, Seung-Won Oh, Young-Seo Jo, Seung-Min Nam, Sang-Hyeok Kim, Jae-Won Huh, Eunjung Lim, Jinhong Kim, Tae-Hoon Yoon*, “Transmittance control of a liquid crystal device using a dye mixture,” in SPIE Organic Photonics + Electronics (SPIE 2018), San Diego (U.S., 2018)
63. Seong-Min Ji, Young-Seo Jo, **Seungmin Nam**, Seung-Won Oh, Sang-Hyeok Kim, Jae-Won Huh, and Tae-Hoon Yoon*, “Color design of a dye-doped cholesteric liquid crystal cell for transmittance control devices,” in International Meeting on Information Display (IMID 2018), Busan (Korea, 2018).

PROJECT

‘Core Technology for Electroactive Simultaneous Opto-Acoustic Generation Using Structural Color Nanomaterials Towards Freeform Synesthetic Interfaces’ (Mar. 2026 – Mar. 2029)

Role: PI, Funding: Ministry of Science and ICT, Korea

‘Development of Ultra-lightweight, Thin Film Cell Technology with Variable Transmittance in the Viewing Area for Improving Visibility of AR Devices’ (Apr. 2024 – Feb. 2026)

Funding: Ministry of Trade, Industry & Energy (MOTIE), Korea

‘Development of Ultra-lightweight, Thin Film Cell Technology with Variable Transmittance in the Viewing Area for Improving Visibility of AR Devices’ (Apr. 2024 – Feb. 2026)

Funding: Ministry of Trade, Industry & Energy (MOTIE), Korea

‘Pixel array type wavelength-tunable chiral laser using perovskite nanocrystal’ (Sep. 2021 – Aug. 2024)

Funding: Samsung Research Funding & Incubation Center of Samsung Electronics

‘Wavelength-tunable ultra-high resolution and color filter for image sensors’ (May. 2021 – Aug. 2024)

Funding: Samsung Electronics

‘Development of large size multi-function film with low operation voltage and high speed’ (Sep. 2021 –

Aug. 2024)

Funding: Ministry of Trade, Industry & Energy (MOTIE), Korea

‘Development of 12 inch panel (20% stretch) and module process technology for massproduction of stretchable display’ (Jan. 2021 – Aug. 2024)

Funding: Ministry of Trade, Industry & Energy (MOTIE), Korea

‘Study on Liquid Crystal Light Shutter Based on Light Scattering or Absorption’ (Jun. 2018 – May. 2019)

Funding: LG Chem, Korea

‘Study on Material and Mode for Improvement of Transmittance Difference’ (Apr. 2017 – Mar. 2018)

Funding: LG Chem, Korea

HONOR & AWARD

2025 Young Scientist Research Grant, *The Optical Society of Korea (OSK)*

Excellence Doctoral Dissertation Award, *Dept. of EE., POSTECH (2025)*

Received Best Poster Paper Award, *The Materials Research Society of Korea (2024)*

Excellence Presentation Award, *The Polymer Society of Korea (2024)*

Received Best Poster Paper Award, *The International Meeting on Information Display (2024)*

Excellent Research Performance Contest, *Dept. of EE., POSTECH (2024)*

POSTECHIAN Fellowship, *BK21 University Innovation Business Team, POSTECH (2023 – 2024)*

Received Best Oral Paper Award, *The Materials Research Society of Korea (2023)*

Received Best Poster Paper Award, *The Materials Research Society of Korea (2023)*

Best Poster Paper Award, *The International Meeting on Information Display (2023)*

Received Best Paper Award, *The Korea Liquid Crystal Conference (2023)*

Excellent Research Performance Contest, *Dept. of EE., POSTECH (2023)*

Received Best Paper Award, *The Korea Liquid Crystal Conference (2019)*

IDW Education and Travel Scholarships, *International Display Workshop (2019)*

REFERENCE

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E-mail: mhsong@unist.ac.kr

Prof. Seung-Won Oh

Professor, Kangwon National University, Korea

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Prof. Dae Seok Kim

Professor, Pukyong National University, Korea

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