

DONG KI YOON
Soft Material Assembly group, KAIST

Department of Chemistry
(E6-6; #206), KAIST, 291 Daehak-ro, Yuseong-gu, Daejeon, Korea, 34141
e-mail: nandk@kaist.ac.kr / web: <http://yoon.kaist.ac.kr>
Tel: +82-42-350-2848
<http://orcid.org/0000-0002-9383-8958>
<http://scholar.google.com/citations?user=g7pb6JUAAAAJ&hl=en>

EDUCATION

BS in Chemical Engineering, Yonsei Univ. (2001.02)
MS in Chemical & Biomolecular Engineering, KAIST (2003.02)
Ph.D in Chemical & Biomolecular Engineering, KAIST (2007.02)

Experience

2021.09 ~ : *Professor in the Department of Chemistry,*
Adjunct Professor at Graduate School of Nanoscience and Technology & KI for the NanoCentury
2020.09 ~ 2021.08: *Associate Professor in the Department of Chemistry*
2011.04 ~ 2020.08: *Associate/Assistant Professor in Graduate School of Nanoscience and Technology*
2009.03 ~ 2011.03: *Research Associate in Dept. of Physics and LCMRC (Liquid Crystal Materials Research Center), Univ. of Colorado, Boulder*
2007.03 ~ 2009.03: *Senior Engineer in Advanced Process Development Team, Memory Division, Semiconductor Business, Samsung Electronics CO., LTD.*

Honors

- ▶ The 6th S-Oil Next Generation Scientist Award (제6회 에쓰-오일 차세대과학자상), Korea (2024.12. 05)
- ▶ The ILCS(The International Liquid Crystal Society) Mid-Career Award (LG) at the 29th International Liquid Crystal Conference (ILCC 2024), Brazil (2024.07. 24)
- ▶ The Excellence in Teaching Award, KAIST (2022. 06. 16)
- ▶ Mid-career Award at the Polymer Society of Korean (중견학술상) (2022. 04. 07)
- ▶ Transdisciplinary Research Prize (융합연구상) at the 50th anniversary of founding KAIST (2021. 05. 25)
- ▶ Award for Advanced Research (학술진보상) at 126th General Meeting of Korean Chemical Society (2020. 10. 20)
- ▶ Prime Minister's Award (국무총리 표창) at 53rd Science Day (2020. 04. 21)
- ▶ Merck Young Scientist Award at the 17th International Meeting on Inf. Dis. (2017), Korea (2017.08)
- ▶ MOE (Ministry of Education) Excellent basic research 50, Korea (2014.11)
- ▶ ILCS(The International Liquid Crystal Society) Early-Career Award: The Michi Nakata Prize at the 24th International Liquid Crystal Conference (ILCC 2012), Ireland (2012.08)
- ▶ Junior Scientist Exchange Award in ICAM(Institute for Complex Adaptive Matter), US (2009.03)

Society activity

- ▶ Editorial board member of Liquid Crystals (2024- present)
- ▶ Associated Editor of Journal of Information Display (2020-present)
- ▶ Associated Editor of Bulletin of the Korean Chemical Society (2022-present)
- ▶ Member of Korean Polymer Society, Vice-Chair of the International Advisory Board (2022-present)/ Organizing Committee Member of Colloid & Molecular Assembly (CAMA) (2023-present)/ Academic Committee Member (2020~2021) / Vice-Chief Editor of Polymer Science and Technology (2017-2018)
- ▶ Member of Korean Chemical Society (2017-present), Secretary in Polymer Chemistry Division (2021)

- ▶ Program Committee of SPIE Photonics West, Emerging Liquid Crystal Technologies (ELCT) (2023-present)
- ▶ Organizing Committee Member of 18th and 17th International Conference on Ferroelectric Liquid Crystals; FLC2021 (Ljubljana, Slovenia) and FLC2019 (Boulder, USA)
- ▶ Life Time Member of The International Liquid Crystal Society (2012-present), A jury to choose the “LC beauty” for the International Liquid Crystal Society(2016)
- ▶ Member of Korean Information Display Society (2011-present), Secretary in LC technology division (2013-2021), Board Member of Korean Information Display Society (2022-present)
- ▶ Member of Korean Synchrotron Radiation User's Association, Secretary in SAXS division (2020-2021)
- ▶ Member of ACS (2018~), Secretary of ACS South Korea Chapter(2022)
- ▶ Organizing Committee Member of Polycondensation 2022

Research Interest

- ▶ Soft materials; Liquid crystals, supramolecules, polymers, particles, etc
- ▶ Nanofabrication and orientation control of soft matters by topographic confinement
- ▶ Nano- and Micro-structural analyses; scattering and microscopy
- ▶ Organic electronics using LC organic semiconductors

Invited talks at the international conference

25 invited talks in the international conferences, including “Arrangement control of plasmonic nanoparticles using biomaterials” San Diego convention center, San Diego, USA, 2018 SPIE Annual Symposium on Optics and Photonics (2018. 08. 19~23)

Patents

19 Patents including Koran and US’ declaration including method of Fabricating Nanoparticle Clusters Array Using Thermally Transformation of Sublimed Liquid Crystal Film/ Korea: 10-2015-0078204, US: 14/927,926

PUBLICATIONS

Research Papers

International Paper

1. Dongha Kim[†], Geonhyeong Park[†], Yun-Seok Choi, Arthur Baucour, Jisung Hwang, Jaeyu Kim, Sanghyeok Park, Hee Seong Yun, Jonghwa Shin, Haiwen Wang, Shanhui Fan, Dong Ki Yoon*, and Min-Kyo Seo*, “Dynamic realization of emergent high-dimensional optical vortices” *Nature Communications* (accepted)
2. Kim, Juri; Yoon, Dong Ki*, “Photopatterning-Induced Diffusion for Directed Molecular Alignment”, *Chem & Bio Engineering* (in revision)
3. Park, Hyewon; Kim, HyeonJun; Kim, Yeongsik; Ahn, Hyungju; Wolska, Joanna*; Kim, YongJoo*; Yoon, Dong Ki*, “Structural Polymorphism in Bent-Core Liquid Crystals: From Helical Nanofilaments to Heliconical-Layered Microcylinders with Light-Responsive Properties” (submitted)
4. Juri Kim[†], Soon Mo Park[†], Mingeun Kim, Woo Jin Choi and Dong Ki Yoon* “Anisotropy-Driven Tunable Plasmonics in DNA-Templated Gold Nanorod Hydrogels” (submitted)
5. Juyeol Kim, Yujin Kang, Dong-Gue Kang, Hyewon Park, Yeongsik Kim, Chinedum O. Osuji, Hyungju Ahn,* Changyeon Lee,* and Dong Ki Yoon*, “Nanoconfinement-Induced Orientation Change of Liquid Crystalline Block Co-

- oligomer” *Journal of Materials Chemistry C*, (in press: doi.org/10.1039/D5TC01674F) (2025. 7. 29)
6. Sieun Jeon[†], Changjae Lee[†], and Dong Ki Yoon* “Dual stimuli-responsive Actuation of Oriented MXene/Polymer Composite” *ACS Applied Materials & Interfaces*, 2025, 17(24), 16, 8, 36091–36099 (2025. 06. 04)
 7. Changjae Lee[†], Wentao Tang[†], Fumito Araoka, Jesse G. Park, Rui Zhang*, Dong Ki Yoon* “Spatial Control of Chiral Self-Assembly and Lithographic Applications in Liquid Crystal Polymer Network” *Advanced Materials*, 37 (40), e10782 (2025. 07. 25)
 8. Hee Seong Yun[†], Haijie Ren[†], Yu Ma, Zazo Cazimir Meijs, Lucio Isa, Rui Zhang*, and Dong Ki Yoon* “Fabrication of Chiral Liquid Crystal Pinwheel Array through Capillarity-Assisted Particle Assembly” *Small*, 21(38), e04056 (2025. 08. 05)
 9. Hee Seong Yun, Dayan Wei, Sungjun Yang, Tae Joo Shin, David M. Walba, Moon Jong Han*, and Dong Ki Yoon*, “Reconfigurable Liquid Crystal-Based Physical Unclonable Function Integrating Optical and Electrical Responses” *Advanced Materials*, 37(39), 2504288 (2025. 6. 12) (featured as a front piece)
 10. Srinivas Gandla[†], Changgyun Moon[†], Jung Woo Leem[†], Jinsik Yoon[†], Hee Seong Yun[†], Min Seok Kim, Dongmin Kim, Sunjong Lee*, Yao Yao*, Dimitris Alexandropoulos*, Young Min Song*, Dong Ki Yoon*, Wook Park*, Young L. Kim*, Sunkook Kim*, “Multiplex Optical Unclonable Functions: Advances and Perspectives in Optics and Photonics for Hardware Security” *ACS Nano*, (in press: doi.org/10.1021/acsnano.5c01917) (2025. 07. 22)
 11. Dongha Kim*[†], Geonhyeong Park*[†], Yun-Seok Choi, Arthur Baucour, Jisung Hwang, Sanghyeok Park, Hee Seong Yun, Jonghwa Shin, Haiwen Wang, Shanhui Fan, Dong Ki Yoon*, Min-Kyo Seo*, “Dynamic realization of emergent high-dimensional optical vortices” *Nat. Commun.* (Accepted)
 12. Baekman Kim[†], Geonhyeong Park[†], Geunjung Lee, Juri Kim, Changjae Lee, Jesse G. Park, Mingeun Kim, Jin Suk Myung, Hyungju Ahn, Soon Mo Park, Woo Jin Choi, and Dong Ki Yoon*, “Solvent-Driven Synthesis of DNA-Based Liquid Crystalline Organogels with Extraordinary Stretchability, Self-Healing, and Higher-Order Structural Assembly” *Small* 21(16), 2500607 (2025. 3. 11)
 13. Geunjung Lee[†], Baekman Kim[†], and Dong Ki Yoon* “Comprehensive Study of Actuation Mechanisms and Applications in Liquid Crystalline Polymer Networks and Elastomer from Nanometer Precision to Macroscale Functionality” *Macromolecular Rapid Communications* (invited review), 46(14), 2401086 (2025. 4. 2)
 14. Youngin Yoo, Jinki Park, Changjae Lee, Dong Ki Yoon, Seong-Ook Park, “Reconfigurable Multibeam Holographic Antenna Based on Liquid-Crystal Technology for Ka-Band LEO Satellite Application” *IEEE Access*, 13, 27141 (2025. 2. 13)
 15. Changjae Lee and Dong Ki Yoon* “Electric Field-Controlled On-demand Surface Deformation in Liquid Crystal Polymer Networks with Topological Defects” *Liquid Crystals* (in press: <https://doi.org/10.1080/02678292.2024.2432565>) (2024. 11. 21)

16. Hyewon Park, Juyeol Kim, Geonhyeong Park, and Dong Ki Yoon*, “Enhancing Color Gamut with Wavelength-Selective Polarization Modulation in Chiral Liquid Crystals” *Adv. Opt. Mater.*, 13(4), 2025 2402228 (2024. 10. 10)
17. Yeongseo Bak[†], Taegyun Hong[†], Jesse Gaehyun Park*, and Dong Ki Yoon* “Macroscopic Alignment of Metal-Organic Framework Crystals: Recent Advances and Perspectives on Sustainability” *Green Chemistry* (invited review) 2025, 27, 2790-2822 (2024. 12. 6)
18. J. Park, Y. Yoo, C. Lee, D. K. Yoon, S. O. Park* “Liquid-Crystal-Based Beam Steering Guided-Wave Metasurface Antenna at Millimeter-Wave Band” *IEEE Antennas and Wireless Propagation Letters* 23(12), 4208-4212 (2024. 8. 6)
19. Wantae Kim, Dae Seok Kim*, and Dong Ki Yoon*, “Surface-induced orientation of liquid crystal phases” *Giant* (invited review) 19, 100324 (2024. 7. 14)
20. Z. C. Meijs, H.S. Yun, C. Sirvinskia, D.K. Yoon, and L. Isa*, “Regular arrays of topological defects within nematic liquid crystals by colloidal assembly” *Liquid Crystals*, 51(15), 2426–2434 (2024. 9. 4)
21. Sangbin Park, Gyumin Kang, Wantae Kim, Sieun Jeon, Hee-Seung Lee, Dong Ki Yoon* and Sunkyu Han*, “Synthesis of securigine B enables photoresponsive materials design” *Chem* 11 (3), 102336 (2024. 10. 30)
22. Minjoong Shin, Soon Mo Park, Jimin Yoo, Ahjin Lee, Hyungju Ahn*, Dong Ki Yoon*, Myungeun Seo* “Tuning of folding height in bilayer-folded lamellae by bending rigidity control” *Macromolecules*, 57(17) 8320-8328 (2024. 8. 29)
23. Juri Kim[†], Hyejeong Yeon[†], Hye-Ryung Choi, Soon Mo Park, Chang-Hun Huh, Kyung Cheol Choi*, Dong Ki Yoon* “Highly Efficient Organic Light Emitting Diode Using DNA as Scattering Layer” *Adv. Opt. Mater.* 12(22) 2400702 (2024. 6. 11)
24. Jung Young Jung[†], Min Jeong Shin[†], Baekman Kim, Ui Jeong Pyo, Jin Gyeong Son, Dong Ki Yoon*, and Sang Woo Han* “Cholesteric Liquid Crystal-Mediated Chiral Plasmonic Films with Strong Chiroptical Response, Dynamic Tunability, and Reversible Thermal Reconfigurability” *Adv. Opt. Mater.* 12(24), 2400760 (2024. 6. 26)
25. Hyewon Park[†], Hye Joo Lee[†], Hyungju Ahn, Woong Chan Han, Hee Seong Yun, Yun-Seok Choi*, Dae Seok Kim* and Dong Ki Yoon* “Mechanochromic Palettes of Cholesteric Liquid Crystal Elastomers for Visual Signaling” *Adv. Opt. Mater.*, 12 (19), 2400266 (2024. 4. 20)
26. Changjae Lee[†], Jinki Park[†], Ye-Eun Chi, Young-In Yoo, Seong-Ook Park*, Dong Ki Yoon* “Ultralow-Voltage Frequency Tuning of Liquid Crystal-Based GHz Antenna via Nanoscratching Method” *Advanced Materials Technologies* 9(7), 2301859 (2024. 2. 14)
27. Soeun Lee, Hyunbin Moon, Seunghwa Ryu, Soon Mo Park, and Dong Ki Yoon, “On-demand Crack Formation on DNA Film via Organic Solvent-induced Dehydration” *Advanced Materials* 36(31), 2314374 (featured as a back cover) (2024. 3. 15)
28. Wantae Kim, Eduardo Vitral, Perry H. Leo, Jorge Viñals, Dae Seok Kim*, Dong Ki Yoon* “Sublimation of Isolated Toric Focal Conic Domain on Micro-Patterned Surfaces” *Soft Matter* 2024, 20, 2040-2051 (2024. 1. 30)

29. Changjae Lee[†], Eon-Taek Oh[†], Taegwan Park, Seon Joon Kim, Yun-Seok Choi*, Fabian Rotermund*, Dong Ki Yoon* “Terahertz-Polarizing Effect Based on Geometric Anisotropy of Ti₃C₂T_x MXene Nanosheet” *Carbon* 2024, 225, 119156 (2024. 4. 17)
30. Soon Mo Park[†], Juri Kim, Dong Ki Yoon* “Evaporation-induced self-assembly of liquid crystal biopolymers” *Materials Horizons* (invited review) 2024, 11, 1843 – 1866 (2024. 1. 31)
31. Baekman Kim, Changjae Lee, Jongseok Kim, Hyun You Kim*, and Dong Ki Yoon* “Synergistic Effect of Fluorination and Molecular Orientational Order Enhances Low- κ of Fluorinated Liquid Crystal Polymer Film” *Chem. Mater.* (invited article) 2023, 35, 23, 10129–10138 (2023. 11. 29)
32. Geunjung Lee[†], Geonhyeong Park[†], Yeongseo Bak, Jesse G. Park, and Dong Ki Yoon* “Universal Strategy for Inorganic Nanoparticle Incorporation into Mesoporous Liquid Crystal Polymer Particles” *Adv. Mater.* 36 (6), 2307388 (2023. 11. 22)
33. Taegyun Hong, Yeongseo Bak, Geonhyeong Park, Changjae Lee, Dong Ki Yoon*, Jesse G. Park*, “On-Demand Tunable Electrical Conductance Anisotropy in a MOF-Polymer Composite” *Small* 20 (18), 2470137 (featured as a front cover) (2024.5.2)
34. Jeong Yeon Han[†], Byeongil Noh[†], Gunoh Lee, Changjae Lee, Kyung Jin Lee*, and Dong Ki Yoon* “Fabrication of Zigzag Parylene Nanofibers in Liquid Crystals with Electric Field-Induced Defect Structure” *ACS Appl. Mater. Interfaces*, 2024, 16, 8, 11125–11133 (2024. 2. 19)
35. Jeongsu Pyeon[†], Soon Mo Park[†], Jeong-Hwan Kim, Yong-Jin Yoon, Dong Ki Yoon*, and Hyoungsoo Kim*, “Plasmonic Metasurfaces of Cellulose Nanocrystal Matrices with Quadrants of Aligned Gold Nanorods for Photothermal Anti-Icing” *Nat. Commun.* 14, 8096 (2023. 12. 08)
36. Juri Kim, Yun-Seok Choi, Geonhyeong Park, Mingeun Kim, Jin Suk Myung, Woo Jin Choi, Soon Mo Park*, and Dong Ki Yoon*, “On-demand aligned DNA hydrogel via light scanning” *ACS Nano*, 17(22), 22778–22787 (2023. 11. 10)
37. Zazo. C. Meijs[†], Hee Seong Yun[†], Pascal Fandre, Geonhyeong Park, Dong Ki Yoon*, and Lucio Isa* “Pixelated Physical Unclonable Functions through Capillarity Assisted Particle Assembly” *ACS Appl. Mater. Interfaces* 2023, 15, 45, 53053–53061 (2023. 11.1)
38. Minjoong Shin, Soon Mo Park, Jimin Yoo, Ahjin Lee, Hyungju Ahn*, Dong Ki Yoon*, Myungeun Seo*, “Tuning of Folding Height in Bilayer-Folded Lamellae by Bending Rigidity Control” *Macromolecules*, 57(17), 8320-8328 (2024. 8. 29)
39. Yeongseo Bak, Geonhyeong Park, Taegyun Hong, Changjae Lee, Jesse G. Park*, Dong Ki Yoon* “Utilization of Physical Anisotropy in Metal-Organic Frameworks via Alignment Control with Liquid Crystal” *Nano Letters* 2023, 23, 16, 7615–7622 (2023. 08. 01)
40. Jeong Yeon Han[†], Kyu Hwan Kim[†], Changjae Lee[†], and Dong Ki Yoon* “Controlled Mesoscopic Growth of Polymeric Fibers Using Liquid Crystal Template” *Macromolecular Rapid Communications* (invited review) 2023, 202300303 (2023. 07. 19)

41. Soon Mo Park[†], Geonhyeong Park[†], Dong Ki Yoon* “Paintable Physical Unclonable Function Using DNA” *Advanced Materials* 35, 2302135 (2023. 05. 05)
42. Geonhyeong Park, Yun-Seok Choi, S. Joon Kwon*, and Dong Ki Yoon* “Planar spin glass with topologically-protected mazes in the liquid crystal targeting for reconfigurable micro security media” *Advanced Materials* 35, 2303077 (2023. 05. 06)
43. Min Jeong Shin[†], San Hae Im[†], Baekman Kim[†], Jieun Choi[†], Lucia Stephani Edwina, Wantae Kim, Jesse Gaehyun Park, Pilhan Kim*, Hyun Jung Chung*, and Dong Ki Yoon* “Fabrication of Scratched Nanogrooves for Highly Oriented Cell Alignment and Application as a Wound Healing Dressing” *ACS Appl. Mater. Interfaces*, 15(15), 18653-18662 (2023. 04. 04)
44. Hee Seong Yun[†], Z. C. Meijs[†], Geonhyeong Park, Yutong Fu, Lucio Isa*, and Dong Ki Yoon* “Controlling liquid crystal boojum defects on fixed microparticle arrays via capillarity-assisted particles assembly” *Journal of Colloid and Interface Science*, 45, 115-121 (2023. 04. 25)
45. Hyewon Park,[†] Hyeonjung Park,[†] Hyungju Ahn, Wooseop Lee, Jinseok Park, Bumjoon J. Kim,* and Dong Ki Yoon* “Nanoconfinement-Dependent Chain Orientation of Polymorphs in Poly(3-dodecylthiophene)s” *Chemistry of Materials*, 35(3), 1355–1362 (2023. 01. 18)
46. Kyu Hwan Kim[†], Changjae Lee[†], Dong Ki Yoon* “Patterned Hydrophobic Liquid Crystalline Fibers Fabricated from Defect Arrays of Reactive Mesogens via Electric Field Modulation” *ACS Appl. Mater. Interfaces*, 15(6), 8387-8392 (2023. 02. 05)
47. Wantae Kim, and Dong Ki Yoon*, “Electron microscopy analysis of soft materials with freeze-fracture techniques” *BULLETIN OF THE KOREAN CHEMICAL SOCIETY*, 14(2), 153-162 (2022. 11. 12)
48. Baohai Pan, Soon Mo Park, Dong Ki Yoon* and Kyung Jin Lee*, “Azo-Functionalized Thermoplastic Polyurethane for Light-Driven Shape Memory Materials” *Macromolecular Rapid Communications* 44(3), 2200650 (2022. 11. 09)
49. Changjae Lee[†], Soon Mo Park[†], Soobin Kim, Yun-Seok Choi, Seon Joon Kim*, Dong Ki Yoon* “Field-induced orientational switching produces vertically aligned Ti3C2Tx MXene nanosheets” *Nat. Commun.* 13, 5615 (2022. 09. 24)
50. Daewoong Jang, Jung-Moo Heo, Fadilatul Jannah, Mohammed Iqbal Khazi, Young Ji Son, Jaegeun Noh, Hyosung An, Soon Mo Park, Dong Ki Yoon, Nila Nandha K, Raz Jelinek,* and Jong-Man Kim* “Stimulus-responsive Tubular Conjugated Polymer 2D Nanosheets” *Angew. Chem. International Edition* 61, e202211465 (2022. 08. 31)
51. Wongi Park[†], Hyewon Park[†], Yun-Seok Choi* and Dong Ki Yoon*, “Optical rotation of chiral photonic crystal for tunable color filter” *Adv. Opt. Mater.* 10(22), 2201099 (2022. 08. 23)
52. Geonhyeong Park, Hyewon Park, Joanna M. Wolska, Jesse Gaehyun Park, and Dong Ki Yoon* “Racemized photonic crystals for physical unclonable function” *Materials Horizons* 9, 2542-2550 (2022. 08. 09) (featured as an inside back cover)

53. Geonhyeong Park, Ahram Suh, Hanqing Zhao, Changjae Lee, Ivan I. Smalyukh*, and Dong Ki Yoon*, “Fabrication of Arrays of Topological Solitons in Patterned Chiral Liquid Crystals for Real-Time Observation of Morphogenesis” *Adv. Mater.* 34, 2201749 (2022. 06. 05) (doi/10.1002/adma.202201749) (featured as an inside back cover)
54. Jeongsu Pyeon, Soon Mo Park, Dong Ki Yoon, and Hyoungsoo Kim* “Controlled nucleation in evaporative crystallization using a confined-vapor driven solutal Marangoni effect” *Soft Matter*, 18 (21), 4067-4076 (2022. 05. 05) (featured as a cover)
55. Hee Seong Yun, Geonhyeong Park, and Dong Ki Yoon* “Orientation Control of Lyotropic Chromonic Liquid Crystals in the Capillary Bridge” *Journal of Materials Chemistry C*, 10(17), 6878 - 6884 (2022. 04. 04)
56. Min Jeong Shin, San Hae Im, Wantae Kim, Hyungju Ahn, Tae Joo Shin, Hyun Jung Chung* and Dong Ki Yoon* “Recyclable cell-aligning scaffold using liquid crystal nanogrooves” *Langmuir* 38(12), 3765–3774 (2022. 3. 18)
57. Moon Jong Han, Dayan Wei, David M. Walba, and Dong Ki Yoon*, “Three-dimensional Orientation Control of Liquid Crystal Semiconductor via Flipping Over” *NPG Asia Mater.*, 14, 28 (2022. 04. 01)
58. S. Shin, J. Eun, S.S. Lee, C. Lee, H. Hugonnet, D. K. Yoon, S. H. Kim, J. Jeong, Y. K. Park*, “Tomographic measurements of dielectric tensors at optical frequency” *Nature Materials*, 21, 317-324 (2022. 03. 03)
59. Jun Su Kang, Sungwoo Kang, Jong-Min Suh, Soon Mo Park, Dong Ki Yoon, Mi Hee Lim, Woo Youn Kim, and Myungeun Seo* “Circularly Polarized Light Can Override and Amplify Asymmetry in Supramolecular Helices”, *J. Am. Chem. Soc.* 2022, 144, 6, 2657–2666 (2022. 2. 3)
60. Wongi Park, Jongmin Lee, Moon Jong Han, Joanna Maria Wolska, Damian Pocięcha, Ewa Gorecka, Min-Kyo Seo, Yun-Seok Choi*, and Dong Ki Yoon* “Light-driven fabrication of chiral photonic lattice of the helical nanofilament liquid crystal phase” *ACS Appl. Mater. Interfaces*, 14(3), 4409-4416 (2022. 01. 14)
61. Chenjing Yang, Baiheng Wu, Jian Ruan, Peng Zhao, Jianzhen Shan, Rui Zhang, Dong Ki Yoon, Dong Chen* and Kai Liu “Mechanochromic Responses of Cholesteric Liquid Crystal Droplets with Nanoscale Periodic Helical Structures Showing Reversible and Tunable Structural Color” *ACS Appl. Polym. Mater.* 2022, 4, 463–468 (2021. 12. 30)
62. Moon Jong Han, Hee Seong Yun, Yongjoon Cho, Minkyu Kim, Changduk Yang, Vladimir Tsukruk*, and Dong Ki Yoon* “Chiral Optoelectronic Functionalities via the DNA–Organic Semiconductor Complex” *ACS Nano* 2021, 15(12), 20353-20363 (2021. 12. 07)
63. Soon Mo Park, Massimo Bagnani, Hee Seong Yun, Moon Jong Han, Raffaele Mezzenga*, Dong Ki Yoon* “Hierarchically Fabricated Amyloid Fibers via Evaporation-Induced Self-Assembly” *ACS Nano*, 2021, 15(12), 20261-20266 (2021. 12. 10)
64. Gyu Jin Choi, Jeong Won Ryu, Ji-Young Jeong, Tae-Jin Je, Dong Ki Yoon*, and Jin Seog Gwag* “Toward Organic Light Emitting Diode Satisfying

- Simultaneously Highly Enhanced Light Extraction and Lowly Ambient Light Reflection” *Advanced Materials Technologies*, 2021, 2101078 (2021. 11.21)
65. Ohjin Kwon, Feng Liu*, Jadwiga Szydłowska, Ewa Gorecka*, Moon Jong Han, Dong Ki Yoon* and Carsten Tschierske*, “Charge transportation and chirality in liquid crystalline helical network phases of achiral BTBT-derived polycatenar molecules” *Advanced Functional Materials*, 2021, 31, 2102271 (2021. 05.07)
 66. Ra You, Sumin Kang, Changjae Lee, Jisoo Jeon, Jeong Jae Wie*, Taek-Soo Kim* and Dong Ki Yoon*, “Programmable liquid crystal defect arrays via electric field modulation for toughened liquid crystal polymer networks” *ACS Appl. Mater. Interfaces*, 2021, 13(30), 36253-36261 (2021. 07. 26)
 67. Soon Mo Park Won-Geun Kim, Junkyu Kim, Eun-Jung Choi, Hyoungsoo Kim, Jin-woo Oh*, Dong Ki Yoon*, “Fabrication of Chiral M13 Bacteriophage Film by Evaporation-Induced Self-Assembly” *Small* 2021, 17, 2008097 (2021. 06. 03) (featured as an inside back cover)
 68. Hyeonjung Park, Moon Jong Han, Youngkwon Kim, Eun Ji Kim, Hyeong Jun Kim*, Dong Ki Yoon*, Bumjoon Kim*, "Regioregularity Dependent Crystalline Structures and Thermal Transitions in Poly(3-dodecylthiophene)s" *Chem. Mater.* 2021, 33(9), 3312-3320 (2021. 04.20)
 69. Geonhyeong Park and Dong Ki Yoon, “Security use of bilayer dichroic films made of liquid crystal polymer network” *Journal of Information Display*, 2021, 22(3), 173-178 (2021. 03. 30)
 70. Wongi Park, Minyong Yang, Hyewon Park, Joanna M. Wolsk, Hyungju Ahn, Tae Joo Shin, Damian Pocięcha, Ewa Gorecka, and Dong Ki Yoon*, “Directing the polymorphism in the helical nanofilament phase” *Chemistry – A European*, 2021, 27, 24, 7108-7113 (2021. 4. 26) (Frontispiece in the paper)
 71. Moon Jong Han and Dong Ki Yoon, “Advances of Soft Materials for Sustainable Electronics”, *Engineering*, 2021, 7, 564-580 (2021. 04. 18) (Featured as a front cover)
 72. Moon Jong Han, Don-Wook Lee, Eun Kyung Lee, Joo-Young Kim, Ji Young Jung, Hyunbum Kang, Hyungju Ahn, Tae Joo Shin, Dong Ki Yoon*, and Jeong-Il Park*, “Molecular Orientation Control of Liquid Crystal Organic Semiconductor for High-Performance Organic Field-Effect Transistors” *ACS Appl. Mater. Interfaces*, 2021, 13, 9, 11125-11133 (2021. 2. 25)
 73. Dong Hyup Kim, Ahram Suh, Dong Ki Yoon*, and So Youn Kim* “Nanoscratch-Directed Self-Assembly of Block Copolymer Thin Films” *ACS Appl. Mater. Interfaces*, 2021, 13, 4, 5772–5781 (2021. 1. 20)
 74. Min Jeong Shin and Dong Ki Yoon, "Role of Stimuli on Liquid Crystalline Defects: From Defect Engineering to Switchable Functional Materials" *Materials*, 2020, 13(23), 5466 (2020.11.30)
 75. Moon Jong Han, Junkyu Kim, Bomi Kim, Soon Mo Park, Hyungju Ahn, Tae Joo Shin, BongSoo Kim*, Hyoungsoo Kim*, and Dong Ki Yoon* “Orientation Control of Semiconducting Polymers Using Microchannel Molds” *ACS Nano* 2020, 14(10), 12951–12961 (2020.10.16)
 76. Geonhyeong Park, Yun-Seok Choi, Hee Seong Yun, and Dong Ki Yoon*, "Fabrication of Bilayer Dichroic Films Using Liquid Crystal Materials

- for Multiplex Applications", *ACS Appl. Mater. Interfaces*, 2020, 12 (40), 45315–45321 (2020. 09. 07)
77. Geonhyeong Park, Simon Čopar, Ahram Suh, Minyong Yang, Uroš Tkalec*, and Dong Ki Yoon*, "Periodic Arrays of Chiral Domains Generated from the Self-Assembly of Micropatterned Achiral Lyotropic Chromonic Liquid Crystal", *ACS Cent. Sci.* 2020, 6(11), 1964-1970 (2020. 09. 09) (featured as a front cover)
 78. Wongi Park, Dong Ki Yoon*, "Orientation Control of Helical Nanofilament Phase and Its Chiroptical Applications", *Crystals*, 2020, 10(8), 675 (2020.08.05)
 79. Wongi Park, Taewoo Ha, Taek Sun Jung, Kyung Ik Sim, Jae Hoon Kim, Joanna M. Wolska, Damian Pociecha, Ewa Gorecka, Teun-Teun Kim* and Dong Ki Yoon*, "Security use of chiral photonic film made of helical liquid crystal structures" *Nanoscale*, 2020, 12, 21629-21634 (2020. 07. 13) (featured as an inside cover)
 80. Soon Mo Park, Geonhyeong Park, Yun Jeong Cha and Dong Ki Yoon*, "Generation of two-dimensional DNA microstructures via topographic control and shearing", *Small*, 2020, 16, 2002449 (2020. 07. 19) (featured as an inside cover)
 81. Dong Ki Yoon*, Chenhui Zhu, Yun Ho Kim, Yongquang Shen, Hee-Tae Jung, Noel A. Clark*, "Dendritic growth in two-dimensional smectic E freely suspended film", *Molecular Systems Design & Engineering*, 2020, 5(4), 815-819 (2020. 03. 13) (invited article)
 82. Moon Jong Han, Michael McBride, Bailey Risteen, Guoyan Zhang, Brian V. Khau, Elsa Reichmanis* and Dong Ki Yoon*, "Highly Oriented and Ordered Water-Soluble Semiconducting Polymers in a DNA Matrix", *Chem. Mater.*, 2019, 32(2), 688–696 (2019. 12. 24) (featured as a supplementary cover)
 83. Dae Seok Kim, Wonsuk Lee, Teresa Lopez-Leon* and Dong Ki Yoon*, "Self-regulated smectic emulsion with switchable lasing application" *Small*, 2019, 15(49), 1903818 (2019.10.10) (featured as a backside cover)
 84. Wongi Park, Damian Pociecha, Ewa Gorecka, Dong Ki Yoon*, "Direct Visualization of Optical Activity in Chiral Substances using a Helical Nanofilament (B4) Liquid Crystal Phase" *Advanced Optical Materials*, 2019, 7(23), 1901399 (2019.10.23) (featured as a cover)
 85. Sihan Bao, Shanshan Wu, Liping Huang, Xin Xu, Rui Xu, Yongguang Li, Yongri Liang, Minyong Yang, Dong Ki Yoon, Myongsoo Lee, Zhegang Huang*, "Supramolecular Nanopumps with Chiral Recognition for Moving Organic Pollutants from Water", *ACS Applied Materials & Interfaces*, 2018, 11(34), 31220-31226 (2019. 8.5)
 86. Ra You, Yun-Seok Choi, Min Jeong Shin, Min-Kyo Seo and Dong Ki Yoon*, "Reconfigurable Periodic Liquid Crystal Defect Array via Modulation of Electric Field", *Advanced Materials Technologies*, 2019, 4(11)1900454, (2019.9.18)
 87. Wongi Park, Taewoo Ha, Teun-Teun Kim, Anna Zep, Hyungju Ahn, Tae Joo Shin, Kyung Ik Sim, Taek Sun Jung, Jae Hoon Kim, Damian Pociecha, Ewa Gorecka and Dong Ki Yoon* "Directed self-assembly of a helical nanofilament liquid crystal phase for use as structural color reflectors" *NPG Asia Mater.*, 2019, 11, 45, (Featured Article) (2019.08.16)

88. Yun Jeong Cha, Soon Mo Park, Ra You, Hyoungsoo Kim and Dong Ki Yoon* "Microstructure arrays of DNA using topographic control" *Nat. Commun.*, 2019, 10, 2512 (2019.06.07)
89. Ahram Suh, Min-Jun Gim, Daniel Beller*, and Dong Ki Yoon* "Topological defects and geometric memory across the nematic-smectic A liquid crystal phase transition" *Soft Matter*, 2019, 15, 5835-5841 (2019.05.31) (featured as a backside cover)
90. Hoang-Linh Nguyen, Sungbin Ju, Lam Tan Hao, Thang Hong Tran, Hyun Gil Cha, Yoon Jeong Cha, Jeyoung Park, Sung Yeon Hwang, Dong Ki Yoon*, Dong Soo Hwang*, and Dongyeop X. Oh* "The renewable and sustainable conversion of chitin into a chiral nitrogen-doped carbon-sheath nanofiber for enantioselective adsorption" *ChemSusChem*, 2019, 12(14), 3236-3242 (2019.05.12) (featured as a cover)
91. Lee Foley, Wongi Park, Minyong Yang, Eric Carlson, Eva Korblova, Dong Ki Yoon*, and David Walba* "Nanoconfinement of the Low Temperature Dark Conglomerate: Structural Control from Focal Conics to Helical Nanofilaments" *Chem. - Eur. J.*, 2019, 25(31) 7438-7442 (2019.04.07) (Frontispiece in the paper)
92. Hyunho Chae, Yong-Hoon Lee, Minyong Yang, Won-Jin Yoon, Dong Ki Yoon, Kwang-Un Jeong, Yeon Hwa Song, U Hyeok Choi, Minjae Lee* "Interesting phase behaviors and ion-conducting properties of dicationic N-alkylimidazolium tetrafluoroborate salts" *RSC Adv.* 2019, 9, 3972-3978 (2019.01.29)
93. Mallikarjuna Reddy Kesama, Sreekantha Reddy Dugasani, Yun Jeong Cha, Junyoung Son, Bramaramba Gnapareddy, Sanghyun Yoo, Dong Ki Yoon* and Sung Ha Park* "Optoelectrical and mechanical properties of multiwall carbon nanotube-integrated DNA thin films" *Nanotechnology* 2019, 30, 245704 (2019.03.29)
94. Ahram Suh, Hyungju Ahn, Tae Joo Shin, and Dong Ki Yoon* "Controllable liquid crystal defect arrays induced by in-plane electric field and their lithographic application" *Journal of Materials Chemistry C* 2019, 7, 1713 – 1719 (2019.01.14)
95. Dae Seok Kim, Simon Copar, Uros Tkalec*, Dong Ki Yoon* "Mosaics of topological defects in micro-templated liquid crystal phases" *Science Advances* 2018, 4(11), eaau8064 (2018. 11.23)
96. Wongi Park, Beatriz Feringán, Minyoung Yang, Seong Ho Ryu, Hyungju Ahn, Tae Joo Shin, Teresa Sierra*, Raquel Giménez*, Dong Ki Yoon* "Manipulation of Supramolecular Columnar Structures of H-Bonded Donor-Acceptor Units via Physicochemical Nanoconfinement" *ChemPhysChem* 2019, 20, 890-897 (2019.02.07)
97. Moon Jong Han, Dayan Wei, Yun Ho Kim, David M. Walba*, Dong Ki Yoon* "Highly oriented liquid crystal semiconductor for organic thin film transistor" *ACS Central Science* 2018, 4(11), 1495-1502 (2018.10.24)
98. Gyeong G Jeon, Myeongjae Lee, Jinwoo Nam, Wongi Park, Minyong Yang, Jong-Ho Choi, Dong Ki Yoon, Eunji Lee, BongSoo Kim, Jong Hyun Kim* "Simple Solvent-Engineering for High-Mobility and Thermally Robust

- Conjugated Polymer Nanowire Field-Effect Transistors” *ACS Applied Materials & Interfaces*, 2018, 10(35), 29824-29830 (2018. 8.8)
99. Ra You, Seong Ho Ryu, Edward Guzman, Eric Carlson, Hyungju Ahn, Tae Joo Shin, Eva Korbloba, David M. Walba, Noel A. Clark, and Dong Ki Yoon* “Nanoconfined heliconical structure of twist-bend nematic liquid crystal phase” *Liquid Crystals* 2019, 46(2), 316-325 (2018.8.17) Featured as a cover
 100. Ahram Suh, Dong Ki Yoon* “Nanoscratching technique for highly oriented liquid crystal materials” *Scientific Reports*, 2018, 8, 9460 (2018. 6.21)
 101. Min Jeong Shin, Min-Jun Gim, Dong Ki Yoon* “Directed Self-Assembly of Topological Defects of Liquid Crystal” *Langmuir* 2018, 34 (7), 2551-2556 (2018. 1. 25)
 102. Dae Seok Kim and Dong Ki Yoon* "Curvatures of smectic liquid crystals and their applications" *Journal of Information Display*, 2018, 19(1), 7-23 (2017. 12.8)
 103. Dae Seok Kim, Ahram Suh, Shu Yang, Dong Ki Yoon* “Grooving of Nanoparticles using Sublimable Liquid Crystal for Transparent Omniphobic Surface” *Journal of Colloid and Interface Science* 2018, 513, 585 (2017. 11.14)
 104. Yun Jeong Cha, Dae Seok Kim and Dong Ki Yoon* “Highly Aligned Plasmonic Gold Nanorods in a DNA Matrix” *Adv. Funct. Mater.* 27, 1703790 (2017. 10.10)
 105. Heejun Jang, Il-Suk Kang, Jihye Kim, Jonghyun Kim, Yun Jeong Cha, Dong Ki Yoon and Wonhee Lee* "Nanofluidic Chip for Liquid TEM Cell Fabricated by Parylene and Silicon Nitride Direct Bonding" *Nanotechnology*, 2017, 28, 375301 (2017. 8. 21)
 106. Shanshan Wu, Yongguang Li, Siying Xie, Cong Ma, Joonwon Lim, Jiong Zhao, Dae Seok Kim, Minyong Yang, Doong Ki Yoon, Myongsoo Lee, Sang Ouk Kim*, Zhegang Huang* "Supramolecular Nanotubes as Catalytic Regulator for Pd Cation and Their Application in Selective Catalysis" *Angew. Chem. Int. Ed.*, 2017, 56, 1-5 (2017.8.9)
 107. Seong Ho Ryu, Dong Ki Yoon* “Switchable plasmonic film using nanoconfined liquid crystals” *ACS Applied Materials & Interfaces*, 9, 25057-25061 (2017. 7.5)
 108. Wonsuk Lee, Da Bin Kim, Myoung Hoon Song, Dong Ki Yoon* “Optofluidic ring resonator laser with a vitamin laser gain medium” *Optics Express* 25(13), 14043-14048 (2017.6.12)
 109. Yun Jeong Cha, Min-Jun Gim, Hyungju Ahn, Tae Joo Shin, Joonwoo Jeong, and Dong Ki Yoon* “Orthogonal Liquid Crystal Alignment Layer: Shear Rate Dependent Orientation of Chromonic Liquid Crystals” *ACS Applied Materials & Interfaces*, 9, 18355-18361 (2017.5.10)
 110. Min-Jun. Gim, Daniel A. Beller and Dong Ki Yoon* “Morphogenesis of liquid crystal topological defects during the nematic-smectic A phase transition” *Nat. Commun.* 8, 15453 (2017. 5. 30)
 111. Dae Seok Kim, Apiradee Honglawan, Shu Yang and Dong Ki Yoon* “Arrangement and SERS Applications of Nanoparticle Clusters Using Liquid Crystals” *ACS Applied Materials & Interfaces*, 9, 7787-7792 (2017.2.10)
 112. Wonsuk Lee, Wenjie Wang, Guksik Lee, Seong Ho Ryu, Xudong Fan*, Dong Ki Yoon* “Electro-tunable liquid crystal laser based on high-Q Fabry-Pérot microcavity” *Optics Express* 25(2), 874-880 (2017.1.23)

113. Seong Ho Ryu, Min-Jun Gim, Wonsuk Lee, Suk-Won Choi, and Dong Ki Yoon* "Switchable photonic crystals using one-dimensional confined liquid crystals for photonic device application" *ACS Applied Materials & Interfaces* 9(3), 3186-3191 (2016. 12. 28)
114. Ra You, Daniel A. Paterson, John M. D. Storey, Corrie T. Imrie*, and Dong Ki Yoon* "Formation of periodic zigzag patterns in the twist bend nematic liquid crystal phase by surface treatment" *Liq. Cryst.* 44(1) 168-176 (2017. 1. 3)
115. Wonsuk Lee, Qiushu Chen, Xudong Fan* and Dong Ki Yoon* "Digital DNA detection based on compact optofluidic laser with ultra-low sample consumption" *Lab on a Chip*, 16, 4770-4776 (2016. 11. 14)
116. Hanim Kim, Seong Ho Ryu, Michael Tuchband, Tae Joo Shin, Eva Korblova, David M. Walba, Noel A. Clark, Dong Ki Yoon* "Structural transitions and guest/host complexing of liquid crystal helical nanofilaments induced by nanoconfinement" *Science Advances*, 2017, 3, e1602102 (2017.2.10)
117. Yun Jeong Cha and Dong Ki Yoon* "Control of Periodic Zigzag Structures of DNA by a Simple Shearing Method" *Adv. Mater.* 29(3), 1604247 (2016.11.15)
118. Min-Jun Gim and Dong Ki Yoon* "Orientation Control of Smectic Liquid Crystals via a Combination Method of Topographic Patterning and Applying In-Plane Electric Field for Linearly Polarized Illuminator" *ACS Applied Materials & Interfaces*, 8 (41) 27942-27948 (2016. 9. 27)
119. Seong Ho Ryu, Hyungju Ahn, Tae Joo Shin, and Dong Ki Yoon* "Direct observation of liquid crystal phases under nanoconfinement: A grazing incidence X-ray diffraction study" *Liq. Cryst.* 44 (4) 713-721 (2016. 09.19)
120. Heejun Jang, Il-Suk Kang, Youngbok Lee, Yun Jeong Cha, Dong Ki Yoon, Chi Won Ahn* and Wonhee Lee* "Direct transfer of multilayer graphene grown on a rough metal surface using PDMS adhesion engineering" *Nanotechnology*, 2016, 27, 365705 (2016. 08.02)
121. Seong Ho Ryu and Dong Ki Yoon* "Liquid crystal phases in confined geometries" *Liq. Cryst.* 43(13-15) 1951-1972 (2016. 7. 15)
122. Min-Jun Gim, Hanim Kim, Dong Chen, Yongqiang Shen, Youngwoo Yi, Eva Korblova, David M. Walba, Noel A. Clark* and Dong Ki Yoon* "Airflow-aligned helical nanofilament (B4) phase in topographic confinement" *Scientific Reports*, 6, 29111 (2016. 07.07)
123. Seong Ho Ryu and Dong Ki Yoon* "Molecular orientation of liquid crystals on topographic nanopatterns" *ACS Applied Materials & Interfaces* 8 (27),17707-17712 (2016. 06.20)
124. Dae Seok Kim, Yun Jeong Cha, Min-Jun Gim, and Dong Ki Yoon* "Fast Fabrication of Sub-200-nm Nanogrooves using Liquid Crystal Material" *ACS Applied Materials & Interfaces* 8 (18),11851-11856 (2016. 04.25)
125. Nauyen Hoang Linh, Yun Kee Jo, Minkyu Cha, Yun Jeong Cha, Dong Ki Yoon, Nareshkumar Sanandiy, Ekavianty Prahastelistia, Dongyeop X. Oh*, Dong Soo Hwang*, "Mussel-Inspired Anisotropic Nanocellulose and Silver Nanoparticle Composite with Improved Mechanical Properties, Electrical Conductivity and Antibacterial Activity" *Polymers* 8(3), 102 (2016. 03.22)
126. Ahram Suh, Dae Seok Kim, Hanim Kim, Hyungju Ahn, Tae Joo Shin and Dong Ki Yoon* "Fabrication of disordered porous structures by solvent-assisted reorganization of liquid crystal materials" *Liq. Cryst.* 43(9) 1198-1207, (2016. 4. 10) * Cover
127. Dongyeop X. Oh, Yun Jeong Cha, Hoang-Linh Nguyen Hwa Heon Je, Yong Seok Jho, Dong Soo Hwang*, Dong Ki Yoon*, "Chiral nematic self-assembly of minimally surface damaged chitin nanofibrils and its load bearing functions" *Scientific Reports*, 6, 23245 (2016. 03.18)
128. Hanim Kim, Seong Ho Ryu, Anna Zep, Hyungju Ahn, Tae Joo Shin, Sang Bok Lee, Damian Pociecha, Ewa Gorecka and Dong Ki Yoon*, "Linkage-length dependent structuring behaviour of bent-core molecules in helical nanostructures" *Soft Matter* 12

- (14), 3326-3330 (2016. 02. 02) * Inside cover
129. Min-Jun Gim, Srikanth Turlapati, Somen Debnath, Nandiraju Rao, Dong Ki Yoon*, "Highly Polarized Fluorescent Illumination Using Liquid Crystal Phase" *ACS Applied Materials & Interfaces*, 8 (5), 3143-3147 (2016. 1. 19)
 130. Dae Seok Kim, Yun Jeong Cha, Mun Ho Kim, Oleg D. Lavrentovich*, Dong Ki Yoon* "Controlling Gaussian and mean curvatures at microscale by sublimation and condensation of smectic liquid crystals" *Nat. Commun.* 7, 10236 (2016. 1. 4)
 131. Kibeom Kim, Hanim Kim, Seong-Yong Jo, Fumito Araoka, Dong Ki Yoon*, Suk-Won Choi* "Photomodulated Supramolecular Chirality in Achiral Photoresponsive Rod-Like Compounds Nanosegregated from the Helical Nanofilaments of Achiral Bent-Core Molecules" *ACS Applied Materials & Interfaces*, 2015, 7 (40), 22686-22691 (2015. 9. 23)
 132. Seong Ho Ryu, Min-Jun Gim, Yun Jeong Cha, Tae Joo Shin, Hyungju Ahn, and Dong Ki Yoon* "Creation of liquid-crystal periodic zigzags by surface treatment and thermal annealing." *Soft Matter*, 11 (44), 8584-8589 (2015. 11. 28) * Cover
 133. Seong Ho Ryu, Hanim Kim, Sunhee Lee, Yun Jeong Cha, Tae Joo Shin, Hyeong Ju Ahn, Eva Korblova, David M Walba, Noel A Clark, Sang Bok Lee and Dong Ki Yoon*, "Nucleation and growth of helical nanofilament (B4) liquid-crystal phase confined in nanobowls" *Soft Matter*, 11, 7778-7782 (2015. 8. 18)
 134. Apiradee Honglawan, Dae Seok Kim, Daniel A. Beller, Dong Ki Yoon, Mohamed A. Gharbi, Kathleen J. Stebe, Randall D. Kamien and Shu Yang*, "Synergistic assembly of nanoparticles in smectic liquid crystals" *Soft Matter*, 11, 7367-7375 (2015. 8. 14)
 135. Yun Jeong Cha, Min-Jun Gim, Kyunghwan Oh and Dong Ki Yoon*, "Twisted-Nematic-Mode Liquid Crystal Display with a DNA Alignment Layer", *Journal of Information Display* 2015, 16(3), 129-135 (2015.8.15)
 136. Sunhee Lee, Hanim Kim, Ethan Tsai, Jacqueline Mae Richardson, Eva D Korblova, David M. Walba, Noel A. Clark, Sang Bok Lee*, and Dong Ki Yoon*, "Multidimensional helical nanostructures in multiscale nanochannels", *Langmuir* 2015, 31 (29), 8156-8161 (2015. 7. 2)
 137. Yun Jeong Cha, Min-Jun Gim, Kyunghwan Oh and Dong Ki Yoon*, "In-Plane Switching Mode for Liquid Crystal Displays Using a DNA Alignment Layer", *ACS Applied Materials & Interfaces*, 2015, 7(24), 13627-13632 (2015. 6. 24)
 138. Dae Seok Kim, Apiradee Honglawan, Kyungnam Kim, Mun Ho Kim, Sohee Jeong, Shu Yang, Dong Ki Yoon* "Fabrication of Periodic Nanoparticle Clusters Using Soft Lithographic Template", *J. Mater. Chem. C*, 2015, 3, 4598-4602 (2015. 4. 8)
 139. S. Lee, H. Kim, T. J. Shin, E. Tsai, J. M. Richardson, E. Korblova, D. M. Walba, N. A. Clark, S. B. Lee* and D. K. Yoon*, "Physico-chemical Confinement of Helical Nanofilaments", *Soft Matter*, 2015, 11, 3653-3659 (2015. 3. 17)
 140. Yun-Ho Kim, Min-Jun Gim, Hee-Tae Jung and Dong Ki Yoon*, "Periodic arrays of liquid crystalline torons in microchannels", *RSC Adv.*, 5, 19279-19283 (2015. 1. 29)
 141. Mun Ho Kim*, Dong Ki Yoon, Sang Hyuk Im*, "Growth pathways of silver nanoplates in kinetically controlled synthesis: bimodal versus unimodal growth", *RSC Adv.*, 2015, 5, 14266-14272 (2015. 1. 22)
 142. Hanim Kim, Sunhee Lee, Tae Joo Shin, Eva Korblova, David M. Walba, Noel A. Clark*, Sang Bok Lee*, Dong Ki Yoon* "Multistep hierarchical self-assembly of chiral nanopore arrays", *Proc. Natl. Acad. Sci. U.S.A.*, 111(40) 14342-14347, (2014. 10. 7)
 143. Min-Jun Gim, Gohyun Han, Suk-Won Choi, Dong Ki Yoon*, "Thermal phase transition behaviours of the blue phase of bent-core nematogen and chiral dopant mixtures under different boundary conditions", *Soft Matter*, 2014, 10, 8224-8228 (2014. 8. 15)
 144. Dae Seok Kim, Yun Jeong Cha, Hanim Kim, Mun Ho Kim, Yun Ho Kim, Dong Ki Yoon*, "Creation of a Superhydrophobic Surface from a Sublimed Smectic Liquid Crystal", *RSC Adv.*, 4, 26946-26950 (2014. 5. 15)
 145. Seong Ho Ryu, Tae Joo Shin, Tao Gong, Yongqiang Shen, Eva Korblova, Renfan Shao, David M. Walba, Noel A. Clark, Dong Ki Yoon* "Cybotactic behavior in the de Vries

- smectic A* liquid crystal structure formed by a silicon-containing molecule", *Physical Review E*, 89, 032502 (2014. 3. 10)
146. Dong Ki Yoon*, Yun Ho Kim, Dae Seok Kim, Seong Dae Oh, Ivan I. Smalyukh, Noel A. Clark*, and Hee-Tae Jung*, "Three-dimensional textures and defects of soft material layering revealed by thermal sublimation" *Proc. Natl. Acad. Sci. U.S.A.*, 110(48) 19263-19267, (2013. 11. 26)
 147. Dong Chen, Dong Ki Yoon, Joseph E. MacLennan, Matthew A. Glaser, Eva Korblova, David M. Walba, Nélida Gimeno, M. Blanca Ros, Rajdeep Deb, Nandiraju V. S. Rao and Noel A. Clark*, "Spiral layer undulation defects in B7 liquid crystals" *Soft Matter*, 9, 11303-11308 (2013.11.28)
 148. Aryeon Kim , Kwang-Suk Jang , Jinsoo Kim , Jong Chan Won , Mi Hye Yi , Hanim Kim , Dong Ki Yoon , Tae Joo Shin , Myong-Hoon Lee , Jae-Won Ka , and Yun Ho Kim, "Solvent-Free Directed Patterning of a Highly Ordered Liquid Crystalline Organic Semiconductor via Template-Assisted Self-Assembly for Organic Transistors" *Adv. Mater.* 25(43) 6219-6225, (2013. 11. 20)
 149. Hanim Kim, Yun Ho Kim, Sunhee Lee, David M. Walba, Noel A. Clark, Sang Bok Lee, Dong Ki Yoon*, "Orientation Control over Bent-Core Smectic Liquid Crystal Phases" *Liq. Cryst.* 41(4) 328-341, (2013. 8. 6) * Cover
 150. Hanim Kim, Sunhee Lee, Tae Joo Shin, Yun Jeong Cha, Eva Korblova, David M. Walba, Noel A. Clark, Sang Bok Lee, Dong Ki Yoon*, "Alignment of Helical Nanofilaments on the Surfaces of Various Self-Assembled Monolayers" *Soft Matter* 9, 6185-6191 (2013.6.4)
 151. Hanim Kim , Youngwoo Yi , Dong Chen , Eva Korblova , David M. Walba , Noel A. Clark* and Dong Ki Yoon*, "Self-assembled hydrophobic surface generated from a helical nanofilament (B4) liquid crystal phase" *Soft Matter* 9, 2793-2797 (2013.1.31)
 152. Dong Ki Yoon, Greg Smith, Ethan Tsai, Mark Moran, David M. Walba, Tommaso Bellini, Ivan I. Smalyukh, Noel A. Clark*, "Alignment of the columnar liquid crystal phase of nanoDNA by confinement in channels" *Liquid Crystals* 39(5), 571-577 (2012.4.23) * Cover
 153. Dong Chen, Joseph E. MacLennan, Renfan Shao, Dong Ki Yoon, Haitao Wang, Eva Korblova David M. Walba, Matthew A. Glaser, and Noel A. Clark, "Chirality-Preserving Growth of Helical Filaments in the B4 Phase of Bent-Core Liquid Crystals" *J. Am. Chem. Soc.* 133(39), 12656-12663 (2011.6.21)

Before KAIST

154. Dong Ki Yoon, Youngwoo Yi, Yongqiang Shen, Eva Korblova, David M. Walba, Ivan I. Smalyukh, and Noel A. Clark, "Orientation of a Helical Nanofilament (B4) Liquid Crystal Phase: Topographic Control of Confinement, Shear Flow, and Temperature Gradients" *Adv. Mater.* 23 (17), 1962-1967, (2011.5.3)
155. Dong Ki Yoon, Rajdeep Deb, Dong Chen, Eva Korblova, Renfan Shao, Ken Ishikawa, Nandiraju V. S. Rao, David M. Walba, Ivan I. Smalyukh, Noel A. Clark, "Organization of the Polarization Splay Modulated Smectic Liquid Crystal Phase by Topographic Confinement" *Proc. Natl. Acad. Sci. U.S.A.* 107(50) 21311-21315, (2010. 12. 14)
156. Dong Ki Yoon, Jinhwan Yoon, Yun Ho Kim, M.C. Choi, Jehan Kim, Osami Sakata, Shigeru Kimura, Mahn Won Kim, Moonhor Ree, and Hee-Tae Jung, "Liquid-crystal periodic zigzags from geometrical and surface-anchoring-induced confinement: Origin and internal structure from mesoscopic scale to molecular level" *Phys. Rev. E* 82(4) 041705, (2010. 10. 15)
157. Yun Ho Kim, Dong Ki Yoon, Hyeon Su Jeong, Oleg D. Lavrentovich, and Hee-Tae Jung, "Smectic Liquid Crystal Defects for Self-assembling Building Blocks" *Advanced Functional Materials* 21(4) 610-627 (2011.2.22)
158. Yun Ho Kim, Hyeon Su Jeong, Jung Hyun Kim, Eun Kyoung Yoon, Dong Ki Yoon and Hee-Tae Jung, "Fabrication of Two-Dimensional Dimple and Conical Microlens Arrays

- from a Highly Periodic Toroidal-Shaped Liquid Crystal Defect Array” *Journal of Materials Chemistry* 20 (31) 6557-6561, (2010. 8. 21)
159. Yun Ho Kim, Jeong-Oen Lee, Hyeon Su Jeong, Jung Hyun Kim, Eun Kyung Yoon, Dong Ki Yoon, Jun-Bo Yoon and Hee-Tae Jung, “Optically selective microlens photomasks using self-assembled smectic liquid crystal defect arrays” *Advanced Materials* 22 (22) 2416-2420, (2010. 6. 11)
 160. Yun Ho Kim, Dong Ki Yoon, Hyeon Su Jeong and Hee-Tae Jung, “Self assembled periodic liquid crystal defects array for soft lithographic template” *Soft Matter* 6 (7) 1426-1431, (2010. 4. 7)
 161. Hyeon Su Jeong, Yong Koan Ko, Yun Ho Kim, Dong Ki Yoon and Hee-Tae Jung, “Self assembled plate-like structures of single-walled carbon nanotubes by non-covalent hydridization with smectic liquid crystals” *Carbon* 48 (3) 774-780, (2010.3.1)
 162. Seung Hak Park, Dong Ok Shin, Bong Hoon Kim, Dong Ki Yoon, Si Yong Lee, Seok-Hwan Oh, Seong-Woon Choi, Sang Chul Jeon, and Sang Ouk Kim, “Block Copolymer Multiple Patterning Integrated with Conventional ArF Lithography” *Soft Matter* 6 (1) 120-125, (2010. 1.7)
 163. Yun Ho Kim, Dong Ki Yoon, and Hee-Tae Jung, “Recent Advances in the Fabrication of Nanotemplates from Supramolecular Materials” *Journal of Materials Chemistry* 19 (48) 9091-9102, (2009. 12.28)
 164. Yun Ho Kim, Dong Ki Yoon, Hyeon Su Jeong, Eun-Kyung Yoon, and Hee-Tae Jung, “Energy transfer in a π -conjugated liquid crystalline molecule with two chromophores of rigid biphenyl core and pyrene head moieties” *Journal of Nanoscience and Nanotechnology* 9(12) 6968-6973, (2009.12.1)
 165. Hyeon Su Jeong, Shingo Tanaka, Dong Ki Yoon, Suk-Won Choi, Yun Ho Kim, Susumu Kawauchi, Fumito Araoka, Hideo Takezoe, and Hee-Tae Jung, “Spontaneous Chirality Induction and Enantiomer Separation in Liquid Crystals composed of Achiral Rod-Shaped 4-Arylbenzoate Esters” *J. Am. Chem. Soc.* 131(41) 15055-15060, (2009.10.21)
 166. Yun Ho Kim, Dong Ki Yoon, Hyeon Su Jeong, Jung Hyun Kim, Eun Kyoung Yoon, and Hee-Tae Jung, “Fabrication of a Superhydrophobic Surface from Smectic Liquid-Crystal Defect Array” *Adv. Funct. Mater.* 19 (18), 3008-3013, (2009.9.23)
 167. Yun Ho Kim, Dong Ki Yoon, M. C. Choi, Hyeon Su Jeong, Mahn Won Kim, Oleg D. Lavrentovich, and Hee-Tae Jung, “Confined Self-Assembly of Toric Focal Conic Domains (The effects of confined geometry on the feature size of toric focal conic domains)” *Langmuir*, 25(3), 1685-1691 (2009.2.3)
 168. Dong Ki Yoon, Myung-Hwan Park, Myoungsoo Lee, and Hee-Tae Jung, “Self-assembling Behavior of a Rod-Coil Molecule on the Water Subphase” *Curr. Appl. Phys.* 8 (6), 651-655 (2008.10.1)
 169. Dong Ki Yoon, M. C. Choi, Yun Ho Kim, Mahn Won Kim, Oleg D. Lavrentovich, and Hee-Tae Jung, “Internal structure visualization and lithographic use of periodic toroidal holes in liquid crystals” *Nat. Mater.* 6 (11), 866-870 (2007.11.1)
 170. Yun Ho Kim, Myung-Sup Jung, Dong Ki Yoon, Mu Geun Jee, and Hee-Tae Jung, “A solution processible semiconducting polymer interlayer for blue light-emitting diodes” *Nanotechnology*, 18 (17), 175608 (2007.5.2)
 171. Dong Ki Yoon, Su Rim Lee, Yun Ho Kim, Baek-Seok Seong, Young Soo Han, Hee-Tae Jung, “Orientation Control of Synthetic Cylindrical Perfluorinated Supramolecular Dendrimers: Surface Anchoring and Magnetic Field Induced Alignments” *Physica B.* 385-386, 801-803, (2006.11.15)
 172. Yun Ho Kim, Dong Ki Yoon, Eun Ho Lee, Young Koan Ko, and Hee-Tae Jung, “Photoluminescence Properties of a Perfluorinated Supramolecular Columnar Liquid Crystal with a Pyrene Core: Effects of the Ordering and Orientation of the Columns” *J. Phys. Chem. B* 110(42), 20836-20842 (2006.10.26)
 173. Dong Ki Yoon, Su Rim Lee, Yun Ho Kim, Sung-Min Choi and Hee-Tae Jung , “Large-Area, Highly Aligned Cylindrical Perfluorinated Supramolecular Dendrimers by

- Magnetic Field" *Advanced Materials* 18 (4), 509-513, (2006.2.17)
174. Eun Ho Lee, Dong Ki Yoon, Jin Mi Jung, Su Rim Lee, Yun Ho Kim, Yeon-A Kim, Guncheol Kim, and Hee-Tae Jung, "Alignment of Perfluorinated Supramolecular Columns on the Surfaces of Various Self-Assembled Monolayers" *Macromolecules*, 38 (12), 5152-5157 (2005.6.14)
 175. S. R. Lee, D. K. Yoon, S. -H. Park, E. H. Lee, Y. H. Kim, P. Stenger, J. A. Zasadzinski, and H. -T. Jung, "Surface Ordering of a Perfluorinated, Self-Assembled, Dendrimer on Water Subphase" *Langmuir*, 21 (11), 4989-4995 (2005.5.24)
 176. M. Lee, M. -H Park, N. -K Oh, W. -C Zin, H. -T Jung, D. K Yoon, "Supramolecular Crystalline Sheets with Ordered Nanopore Arrays from Self-Assembly of Rigid-Rod Building Blocks" *Angew. Chem. International Edition*, 43 (47), 6465-6468 (2004.6.6)
 177. D. K. Yoon and H. -T. Jung, "Molecular Orientation and Morphology of a Self-Assembled Supramolecular Dendrimer", *Mol. Cryst. Liq. Cryst.* 412, 2027-2034 (2004.1.1)
 178. Dong Ki Yoon, Young Koan Ko, Hee-Tae Jung, "Surface alignment and control of a dendritic liquid crystal in thin films", *Liquid Crystals*, 30 (5), 559-563 (2003.5).
 179. D. K. Yoon and H. -T. Jung, "Self-Organization of a Fan-shaped Dendrimer at the Air-Water Interface", *Langmuir*, 19 (4), 1154-1158 (2003.2.18).
 180. H.-T. Jung, S. O. Kim, Y. K. Ko, D. K. Yoon, S. D. Hudson and V. Percec, M. N. Holerca, W.-D. Cho and P. E. Mosier, "Surface Order in Thin Films of Self-Assembled Columnar Liquid Crystals", *Macromolecules*, 35 (9), 3717-3721 (2002.4.23).

Patents

1. Hydrophobic Surface Structure Having Micro-Nano Dual Roughness and Method for Preparing the Same/ Korea: 10-2013-0157260
2. Method of Fabricating Nanoparticle Clusters Array Using Thermally Transformation of Sublimed Liquid Crystal Film/ Korea: 10-2015-0078204, US: 14/927,926
3. Method of Dichroic Polarizing Light-emitting Film Using Ferroelectric Liquid Crystal Molecule Have Luminescence Properties and Liquid Crystal Display Comprising Dichroic Polarizing Light-emitting Film/ Korea: 10-2015-0146225
4. Method of Dichroic Polarizing Light-emitting Film Using Ferroelectric Liquid Crystal Molecule Have Luminescence Properties and Liquid Crystal Display Comprising the Same/ Korea: 10-2016-0115457, US: 15/296,848
5. Photo-luminescence liquid crystal compound/ Korea: 10-2016-0182198
6. Method for fabricating nanoparticle clusters/ Korea: 10-2016-0141159
7. Alignment method of liquid crystal and method of preparing liquid crystal cell/ Korea: 10-2016-0143510
8. Method for Preparing Coating Layer Having Highly Aligned Nonorods in Lyotropic Liquid Crystal Matrix/ Korea: 10-2017-0104741
9. One-Dimensional Switchable Photonic Crystals Using Nanoconfined Liquid Crystals and Method of Preparing The Same/ Korea: 10-2018-0030527
10. Method of Preparing Optical Structure Having Controlled Liquid Crystal Alignment Using Softlithography and Optical Structure Prepared Thereby/ Korea: 10-2018-0029223
11. Photonic Crystal Comprising Photo-Responsive Molecules and Method of Preparing the Same/ Korea: 10-2018-0032862
12. Method of Preparing Three Dimensional Nanostructure and Three Dimensional Chiral Nanostructure/ Korea: 10-2014-0093515 (Registration number: 10-1581406-0000)
13. Method for preparing DNA template for nano-structure fabrication/ Korea: 10-2015-0082789 (Registration number: 10-1683777-0000)
14. Method of Preparing Coating Layer of Lyotropic Chromonic Liquid Crystal for Multi-

- Domain Liquid Crystal Alignment/ Korea: 10-2016-0033332 (Registration number: 10-1769011-0000)
15. Method of Fabricating Liquid Crystal Layer and Nanoparticle Clusters/ Korea: 10-2016-0068711 (Registration number: 10-1841263-0000)

Before KAIST

1. Method of Fine Patterning Semiconductor Device/ Korea: P2008-0001824 P2008-30784"US : 12/217,784 (2008.07.09) JP : 2008-251250 (2008.09.29) CN : 200810171011.0 (2008.10.31)"
2. Method of Fine Patterning Semiconductor Device/ Korea: P2008-138548 "US: 12/655,344"
3. BCP Lithography Method using ABC Triblock Copolymer/ Korea: P2007-0131049; "US : 12/283,449 (2008.09.12) JP : 2008-310857 (2008.12.05) CN : 200810183747.X (2008.12.15)"
4. BCP Lithography Method using Graphoepitaxy Mold/ Korea: P2008-0009059; "US : 12/235,361 (2008.09.22) JP : 2008-252906 (2008.09.30)"
5. Method of forming fine pattern using block copolymer/ Korea: P2008-138549 "US: 12/591,427"
6. Method for Fabricating Micro- or Nano-Sized Patterns Using Liquid Crystal Phase and Defect Structure/ Korea: 10-2010-0097903

Invited talks in the international conference

1. "Orientation of helical nanofilament (B4) liquid crystal phase in the confined geometries", Hilton, Mainz, German, 24th International Liquid Crystal Conference (2012.8.19~24)
2. "Morphological behavior of helical nanofilament (B4) liquid crystal phase" EXCO, Daegu, Korea, IMID2012 (2012.8.28~31)
3. "Chiral nano-pore arrays with bent-core liquid crystals and their applications" Moscone center, San Francisco, USA, SPIE. PHOTONICS WEST (2015.02.07~12)
4. "Liquid Crystallinity in Soft Matter at and Beyond Equilibrium Hierarchically Self-Assembled Textures and Defects of Liquid Crystal", University of New England Biddeford, ME, USA Gordon Research Conference (2015. 06.21~26)
5. "Orientation control of B4, helical nanofilament phase" DAP, Prague, Czech Republic 15th International Conference on Ferroelectric Liquid Crystals (2015. 06.28~07.03)
6. "Curvatures of Smectic Liquid Crystals under Thermally Non-equilibrium Condition" Kent state U., Kent, USA, 26th International Liquid Crystal Conference (2016. 7. 31~8. 5)
7. "Liquid crystal arrangement in the nanoconfinement and its optical applications" San Diego convention center, San Diego, USA, 2016 SPIE Annual Symposium on Optics and Photonics (2016. 8. 28~9. 1)
8. "Micro- and Nanofabrication Using Liquid Crystal Materials", Daejeon Convention Center, Daejeon, Korea, 14th International Conference on the Frontiers of Polymers and Advanced Materials (2016.10.31~11.4)
9. "Nanoconfined liquid crystal materials for switchable coloration", Bexco, Busan, Korea, IMID 2017 (2017.08.29~31)
10. "Switchable structural colors using nanoconfined liquid crystals", Nanjing University, Nanjing, China, The 7th international symposium on liquid crystal photonics (2018. 04. 13~16)
11. "Arrangement control of plasmonic nanoparticles using biomaterials" San Diego convention center, San Diego, USA, 2018 SPIE Annual Symposium on Optics and Photonics (2018. 08. 19~23)

