



# Arri Priimägi

List of Publications, 1.8.2024

## PUBLICATION SUMMARY

**Researcher identifiers:** ORCID: 0000-0002-5945-9671; ResearcherID: E-7319-2012

**Number of publications:** 148, including *Science* x1, *Nat. Mater.* x1, *Nat. Nanotech.* x1, *Nat. Photon.* x1, *Nat. Commun.* x6; *Adv. Mater.* x12; *PNAS* x1; *JACS* x1; *ACIE* x4, ...

**Number of citations:** 13 360 (Google Scholar 1.8.2024)

**H-index:** 51

## PEER-REVIEWED SCIENTIFIC ARTICLES

### 2024

149. K. Kuntze, .J. Isokuortti, J.J. van der Wal, T. Laaksonen, S. Crespi, N.A. Durandin, **A. Priimägi**, "*Detour to success: photoswitching via indirect excitation*", *Chemical Science* **2024**, *15*, 11684–11698.
148. **A. Priimägi**, "*Stronger together*", *Nature Materials* **2024**, *23*, 167 (News & Views).
147. M.A. Kostianen, **A. Priimägi**, J.V.I. Timonen, R.H.A. Ras, M. Sammalkorpi, M. Penttilä, O. Ikkala, M.B. Linder, "*Materials inspired by living functions*", *Advanced Functional Materials* **2024**, DOI: 10.1002/adfm.202402097.
146. A. Eklund, S. Hu, Y. Fang, H. Savolainen, H. Pi, H. Zeng, **A. Priimägi**, O. Ikkala, H. Zhang, "*Bright and Switchable Whiteness in Macro-Crosslinked Hydrogels*", *Advanced Optical Materials* **2024**, *12*, 2302487.
145. H. Guo, T.P. Ruoko, H. Zeng, **A. Priimägi**, "*Hydrogen-Bonded Liquid Crystal Elastomers Combining Shape Memory Programming and Reversible Actuation*", *Advanced Functional Materials* **2024**, *34*, 2312068.
144. A. Berdin, H.T. Rekola, **A. Priimägi**, "*Complex Fourier Surfaces by Superposition of Multiple Gratings on Azobenzene Thin Films*", *Advanced Optical Materials* **2024**, *12*, 2301597.
143. Y. Nemati, Z. Deng, H. Pi, H. Guo, H. Zhang, **A. Priimägi**, H. Zeng, "*A Scalable, Incoherent-Light-Powered, Omnidirectional Self-Oscillator*", *Advanced Intelligent Systems* **2024**, *6*, 2300054.
142. N.P. Pinchin, H. Guo, H. Meteling, Z. Deng, **A. Priimägi**, H. Shahsavan, "*Liquid Crystal Networks Meet Water: It's Complicated!*", *Advanced Materials* **2024**, *36*, 2303740.

141. Z. Deng, H. Zhang, **A. Priimagi**, H. Zeng, "Light-Fueled Nonreciprocal Self-Oscillators for Fluidic Transportation and Coupling", *Advanced Materials* **2024**, *36*, 2209683.

## 2023

140. H. Peussa, C. Fedele, H. Tran, M. Marttinen, J. Fadjukov, E. Mäntylä, **A. Priimagi**, S. Nymark, T.O. Ihalainen, "Light-Induced Nanoscale Deformation in Azobenzene Thin Film Triggers Rapid Intracellular Ca<sup>2+</sup> Increase via Mechanosensitive Cation Channels", *Advanced Science* **2023**, *10*, 2206190.
139. J. Gemen, J.R. Church, T.P. Ruoko, N. Durandin, M.J. Bialek, M. Weissenfels, M. Feller, M. Kazes, V.A. Borin, M. Odaybat, R. Kalepu, Y. Diskin-Posner, D. Oron, M.J. Fuchter, **A. Priimagi**, I. Schapiro, R. Klajn, "Disequilibrating azoarenes by visible-light sensitization under confinement", *Science* **2023**, *381*, 1357–1363.
138. H. Guo, C. Liang, T.P. Ruoko, H. Meteling, B. Peng, H. Zeng, **A. Priimagi**, "Programmable and Self-Healable Liquid Crystal Elastomer Actuators Based on Halogen Bonding", *Angewandte Chemie International Edition* **2023**, *62*, e202309402.
137. Q. Liu, Y. Zhou, A. Shaukat, Z. Meng, D. Kyllonen, I. Seitz, D. Langerreiter, K. Kuntze, **A. Priimagi**, L. Zheng, M.A. Kostianen, "Optically Controlled Construction of Three-Dimensional Protein Arrays", *Angewandte Chemie International Edition* **2023**, *62*, e202303880.
136. M. Paatelainen, M. Lahikainen, A. Berdin, K. Kuntze, W.M. Nau, Nonappa, **A. Priimagi**, "Hydrogel Lasers Via Supramolecular Host–Guest Complexation", *Advanced Optical Materials* **2023**, *11*, 2300232.
135. K. Dradrach, M. Zmyslony, Z. Deng, **A. Priimagi**, J. Biggins, P. Wasylczyk, "Light-driven peristaltic pumping by an actuating splay-bend strip", *Nature Communications* **2023**, *14*, 1877.
134. A. Koivuporras, A. Mailman, H. Guo, **A. Priimagi**, R. Puttreddy, "Halogen Bonding in Halothiophene Building Blocks", *Crystal Growth & Design* **2023**, *23*, 8889–8896.
133. K. Kuntze, D.R.S. Pooler, M. Di Donato, M.F. Hilbers, P. van der Meulen, W.J. Buma, **A. Priimagi**, B.L. Feringa, S. Crespi, "A visible-light-driven molecular motor based on barbituric acid", *Chemical Science* **2023**, *14*, 8458–8465.
132. K. Kuntze, J. Viljakka, M. Virkki, C.Y.D. Huang, S. Hecht, **A. Priimagi**, "Red-light photoswitching of indigos in polymer thin films", *Chemical Science* **2023**, *14*, 2482–2488.

## 2022

131. H. Guo, R. Puttreddy, T. Salminen, A. Lends, K. Jaudzems, H. Zeng, **A. Priimagi**, "Halogen-bonded shape memory polymers", *Nature Communications* **2022**, *13*, 7436.
130. H. Zhang, H. Zeng, A. Eklund, H. Guo, **A. Priimagi**, O. Ikkala, "Feedback-controlled hydrogels with homeostatic oscillations and dissipative signal transduction", *Nature Nanotechnology* **2022**, *17*, 1303–1310.
129. Q. Yang, H. Shahsavan, Z. Deng, H. Guo, H. Zhang, H. Liu, C. Zhang, **A. Priimagi**, X. Zhang, H. Zeng, "Semi-Crystalline Rubber as a Light-Responsive, Programmable, Resilient Robotic Material", *Advanced Functional Materials* **2022**, *32*, 2206939.

128. A. Berdin, J.R. Gill, E. Perivolari, J. Kauppo, V. Apostolopoulos, G. D'Alessandro, M. Kaczmarek, **A. Priimagi**, "Analysis of light diffraction by azobenzene-based photoalignment layers", *Optics Express* **2022**, *30*, 29495–29506.
127. C. Fedele, T.P. Ruoko, K. Kuntze, M. Virkki, **A. Priimagi**, "New tricks and emerging applications from contemporary azobenzene research", *Photochemical & Photobiological Sciences* **2022**, *21*, 1719–1734.
126. D. Ghindani, I. Issah, S. Chervinskii, M. Lahinkainen, K. Kuntze, **A. Priimagi**, H. Caglayan, "Humidity-Controlled Tunable Emission in a Dye-Incorporated Metal–Hydrogel–Metal Cavity", *ACS Photonics* **2022**, *30*, 2287–2294.
125. H. Guo, H. Zeng, **A. Priimagi**, "Optically controlled grasping-slipping robot moving on tubular surfaces", *Multifunctional Materials* **2022**, *5*, 024001.
124. B. Audia, C. Fedele, C.M. Tone, G. Cipparrone, **A. Priimagi**, "Surface Stability of Azobenzene-Based Thin Films in Aqueous Environment: Light-Controllable Underwater Blistering", *Advanced Materials Interfaces* **2022**, *9*, 2102125.
123. M. Isomäki, C. Fedele, L. Kääriäinen, E. Mäntylä, S. Nymark, T.O. Ihalainen, **A. Priimagi**, "Light-Responsive Bilayer Cell Culture Platform for Reversible Cell Guidance", *Small Science* **2022**, *2*, 2100099.
122. E. Taipale, N.A. Durandin, J.K. Salunke, N.R. Candeias, T.P. Ruoko, J.S. Ward, **A. Priimagi**, K. Rissanen, "Protonation-induced fluorescence modulation of carbazole-based emitters", *Materials Advances* **2022**, *3*, 1703–1712.
121. J. Liu, H. Zeng, M. Cheng, Z. Wang, J. Wang, M. Cen, D. Luo, **A. Priimagi**, Y.J. Liu, "Photoelastic plasmonic metasurfaces with ultra-large near infrared spectral tuning", *Materials Horizons* **2022**, *9*, 942–951.
120. H. Guo, **A. Priimagi**, H. Zeng, "Optically Controlled Latching and Launching in Soft Actuators", *Advanced Functional Materials* **2022**, *32*, 2108919.
119. M. Cheng, H. Zeng, Y. Li, J. Liu, D. Luo, **A. Priimagi**, Y.J. Liu, "Light-Fueled Polymer Film Capable of Directional Crawling, Friction-Controlled Climbing, and Self-Sustained Motion on a Human Hair", *Advanced Science* **2022**, *9*, 2103090.
118. K. Kuntze, J. Viljakka, E. Titov, Z. Ahmed, E. Kalenius, P. Saalfrank, **A. Priimagi**, "Towards low-energy-light-driven bistable photoswitches: ortho-fluoroaminoazobenzenes", *Photochemical & Photobiological Sciences* **2022**, *21*, 159–173.

## 2021

117. K. Kuntze, J. Isokuortti, A. Siiskonen, N. Durandin, T. Laaksonen, **A. Priimagi**, "Azobenzene Photoswitching with Near-Infrared Light Mediated by Molecular Oxygen", *The Journal of Physical Chemistry B* **2021**, *125*, 12568–12573.
116. S. Chervinskii, I. Issah, M. Lahikainen, A.R. Rashed, K. Kuntze, **A. Priimagi**, H. Caglayan, "Humidity- and temperature-tunable metal–hydrogel–metal reflective filters", *ACS Applied Materials & Interfaces* **2021**, *13*, 50564–50572.
115. S. Yang, J.D. Harris, A. Lambai, L.L. Jeliakov, G. Mohanty, H. Zeng, **A. Priimagi**, I. Aprahamian, "Multistage Reversible T<sub>g</sub> Photomodulation and Hardening of Hydrazone-Containing Polymers", *Journal of the American Chemical Society* **2021**, *143*, 16348–16353.

114. L. Canil, J. Salunke, Q. Wang, M. Liu, H. Köbler, M. Flatken, L. Gregori, D. Meggiolaro, D. Ricciarelli, F. De Angelis, M. Stolterfoht, D. Neher, **A. Priimagi**, P. Vivo, A. Abate, "Halogen-Bonded Hole-Transport Material Suppresses Charge Recombination and Enhances Stability of Perovskite Solar Cells", *Advanced Energy Materials* **2021**, *11*, 2101553.
113. P. Lv, X. Yang, H.K. Bisoyi, H. Zeng, X. Zhang, Y. Chen, P. Xue, S. Shi, **A. Priimagi**, L. Wang, W. Feng, Q. Li "Stimulus-driven liquid metal and liquid crystal network actuators for programmable soft robotics", *Materials Horizons* **2021**, *8*, 2475–2484.
112. J. Isokuortti, K. Kuntze, M. Virkki, Z. Ahmed, E. Vuorimaa-Laukkanen, M.A. Filatov, A. Turshatov, T. Laaksonen, **A. Priimagi**, N.A. Durandin, "Expanding excitation wavelengths for azobenzene photoswitching into the near-infrared range via endothermic triplet energy transfer", *Chemical Science* **2021**, *12*, 7504–7509.
111. M. Ristola, C. Fedele, S. Hagman, L. Sukki, F.E. Kapucu, R. Mzezewa, T. Hyvärinen, P. Kallio, **A. Priimagi**, S. Narkilahti, "Directional Growth of Human Neuronal Axons in a Microfluidic Device with Nanotopography on Azobenzene-Based Material", *Advanced Materials Interfaces* **2021**, *13*, 2100048.
110. H.D. Shirazi, Y. Dong, J. Niskanen, C. Fedele, **A. Priimagi**, V.P. Jokinen, J. Vapaavuori, "Multiscale Hierarchical Surface Patterns by Coupling Optical Patterning and Thermal Shrinkage", *ACS Applied Materials & Interfaces* **2021**, *13*, 15563–15571.
109. P. Xue, H. Bisoyi, Y. Chen, H. Zeng, J. Yang, X. Yang, P. Lv, X. Zhang, **A. Priimagi**, L. Wang, Q. Li, "Near-Infrared Light-Driven Shape-Morphing of Programmable Anisotropic Hydrogels Enabled by MXene Nanosheets", *Angewandte Chemie International Edition* **2021**, *60*, 3390–3396.

## 2020

108. H. Rekola, A. Berdin, C. Fedele, M. Virkki, **A. Priimagi**, "Digital holographic microscopy for real-time observation of surface-relief grating formation on azobenzene-containing films", *Scientific Reports* **2020**, *7*, 19642.
107. C. Fedele, E. Mäntylä, B. Belardi, T. Hamkins-Indik, S. Cavalli, P.A. Netti, D.A. Fletcher, S. Nymark, **A. Priimagi**, T.O. Ihalainen, "Azobenzene-based sinusoidal surface topography drives focal adhesion confinement and guides collective migration of epithelial cells", *Scientific Reports* **2020**, *10*, 15329.
106. J.M. Taskinen, A.J. Moilanen, H. Rekola, K. Kuntze, **A. Priimagi**, P. Törmä, T.K. Hakala, "All-Optical Emission Control and Lasing in Plasmonic Lattices", *ACS Photonics* **2020**, *7*, 2850–2858.
105. M. Lahikainen, K. Kuntze, H. Zeng, S. Helanterä, S. Hecht, **A. Priimagi**, "Tunable Photomechanics in Diarylethene-Driven Liquid Crystal Network Actuators", *ACS Applied Materials & Interfaces* **2020**, *12*, 47939–47947.
104. A.S. Kuentler, M. Lahikainen, H. Zhou, X. Wu, **A. Priimagi**, R.C. Hayward, "Reconfiguring Gaussian Curvature of Hydrogel Sheets with Photoswitchable Host–Guest Interactions", *ACS Macro Letters* **2020**, *9*, 1172–1177.
103. B.O. Asamoah, S. Mohamed, S. Datta, P. Karvinen, H. Rekola, **A. Priimagi**, T.K. Hakala, "Optically induced crossover from weak to strong coupling regime between surface plasmon polaritons and photochromic molecules", *Optics Express* **2020**, *28*, 26509–26518.
102. A. Eklund, H. Zhang, H. Zeng, **A. Priimagi**, O. Ikkala, "Fast Switching of Bright Whiteness in Channeled Hydrogel Networks", *Advanced Functional Materials* **2020**, *30*, 2000754.

101. **A. Priimagi**, S. Hecht, "From Responsive Molecules to Interactive Materials", *Advanced Materials* **2020**, *32*, 2000215.
100. H. Zhang H. Zeng, **A. Priimagi**, O. Ikkala, "Pavlovian Materials—Functional Biomimetics Inspired by Classical Conditioning", *Advanced Materials* **2020**, *32*, 1906619.
99. H. Shahsavan, A. Aghakhani, H. Zeng, Y. Guo, Z.S. Davidson, **A. Priimagi**, M. Sitti, "Bioinspired underwater locomotion of light-driven liquid crystal gels", *Proceedings of the National Academy of Sciences* **2020**, *117*, 5125–5133.
98. J. Vapaavuori, J.E. Koskela, X. Wang, R.H.A. Ras, **A. Priimagi**, C.G. Bazuin, C. Pellerin, "Effect of hydrogen-bond strength on photoresponsive properties of polymer-azobenzene complexes", *Canadian Journal of Chemistry* **2020**, DOI: 10.1139/cjc-2020-0048.
97. E. Tervola, K.N. Truong, J.S. Ward, **A. Priimagi**, K. Rissanen "Fluorescence enhancement of quinolines by protonation", *RSC Advances* **2020**, *10*, 29385–29393.
96. O.M. Wani, A.P.H.J. Schenning, **A. Priimagi**, "A bifacial colour-tunable system via combination of a cholesteric liquid crystal network and hydrogel", *Journal of Materials Chemistry C* **2020**, *8*, 10191–10196.
95. M. Lahikainen, H. Zeng, **A. Priimagi**, "Design principles for non-reciprocal photomechanical actuation", *Soft Matter* **2020**, *16*, 5951–5958.
94. J. Salunke, X. Guo, M. Liu, Z. Lin, N.R. Candeias, **A. Priimagi**, J. Chang, P. Vivo, "N-Substituted Phenothiazines as Environmentally Friendly Hole-Transporting Materials for Low-Cost and Highly Stable Halide Perovskite Solar Cells", *ACS Omega* **2020**, *5*, 23334–23342.
93. J. Salunke, A. Singh, D. He, H. Pham, Y. Bai, L. Wang, S. Dahlström, M. Nyman, S. Manzhos, K. Feron, R. Österbacka, **A. Priimagi**, P. Vivo, P. Sonar, "Pyrene Functionalized Organic Semiconductors for Light-emitting Diodes and Mixed Halide Perovskite Solar Cells", *Organic Electronics* **2020**, *77*, 105524.
92. Y.C. Cheng, H.C. Lu, X. Lee, H. Zeng, **A. Priimagi**, "Kirigami-based light-induced shape-morphing and locomotion", *Advanced Materials* **2020**, *32*, 1906233.
91. H. Zeng, H. Zhang, O. Ikkala, **A. Priimagi**, "Associative learning by classical conditioning in liquid crystal network actuators", *Matter* **2020**, *2*, 194–206.

## 2019

90. H. Zeng, M. Lahikainen, L. Liu, Z. Ahmed, O. Wani, M. Wang, H. Yang, **A. Priimagi**, "Light-fuelled freestyle self-oscillators", *Nature Communications* **2019**, *10*, 5057.
89. M. Saccone, M. Blanke, C. Daniliuc, H. Rekola, J. Stelzer, **A. Priimagi**, J. Voskuhl, M. Giese, "Mesogens with Aggregation induced Emission formed by Hydrogen-bonding", *ACS Materials Letters* **2019**, *1*, 589–593.
88. A. Berdin, H. Rekola, O. Sakhno, M. Wegener, **A. Priimagi**, "Continuously tunable polymer membrane laser", *Optics Express* **2019**, *27*, 25634–25646.
87. H. Zhang, H. Zeng, **A. Priimagi**, O. Ikkala, "Programmable responsive hydrogels inspired by classical conditioning algorithm", *Nature Communications* **2019**, *10*, 3267.
86. H. Zhang, M. Liu, W. Yang, L. Judin, T.I. Hukka, **A. Priimagi**, Z. Deng, P. Vivo, "Thionation Enhances the Performance of Polymeric Dopant-Free Hole-Transporting Materials for Perovskite Solar Cells", *Advanced Materials Interfaces* **2019**, *6*, 1901036.

85. J. Vapaavuori, J. Grosrenaud, A. Siiskonen, **A. Priimagi**, C. Pellerin, C.G. Bazuin, "Photocontrol of Supramolecular Azo-Containing Block Copolymer Thin Films During Dip-Coating: Toward Nanoscale Patterned Coatings", *ACS Applied Nano Materials* **2019**, 2, 3526–3537.
84. V. Chang, C. Fedele, **A. Priimagi**, A. Shishido, C.J. Barrett, "Photo-Reversible Soft Azo Dye Materials: Towards Optical Control of Bio-Interfaces", *Advanced Optical Materials* **2019**, 7, 1900091.
83. M. Liu, H. Zhang, D. Gedamu, P. Fourmont, H. Rekola, A. Hiltunen, S.G. Cloutier, R. Nechache, **A. Priimagi**, P. Vivo, "Halide perovskite nanocrystals for next-generation optoelectronics", *Small* **2019**, 15, 1900801.
82. J. Salunke, X. Guo, L. Zhenhua, J. Vale, N.R. Candeias, M. Nyman, S. Ahlström, R. Österbacka, **A. Priimagi**, J. Chang, P. Vivo, "Phenothiazine-based hole transporting materials towards eco-friendly perovskite solar cells", *ACS Applied Energy Materials* **2019**, 2, 3021-3027.
81. M. Shin, J. Kim, Y.K. Jung, T.P. Ruoko, **A. Priimagi**, A. Walsh, B. Shin, "Low-dimensional formamidinium lead perovskite architectures via controllable solvent intercalation", *Journal of Materials Chemistry C* **2019**, 7, 3945–3951.
80. O.M. Wani, R. Verpaalen, H. Zeng, **A. Priimagi**, A.P.H.J. Schenning, "An artificial nocturnal flower via humidity-gated photoactuation in liquid crystal networks", *Advanced Materials* **2019**, 31, 1805985.
79. H. Zeng, M. Lahikainen, O.M. Wani, A. Berdin, **A. Priimagi**, "Liquid Crystal Polymer Networks and Elastomers for Light-Fueled Robotics", in *Photoactive Functional Soft Materials: Preparation, Properties, and Applications* (Ed. Quan Li), Wiley-VCH **2019**, pp. 197–226.
78. M. Saccone, M. Spengler, M. Pfletscher, K. Kuntze, M. Virkki, C. Wölper, G. Jansen, R. Gehrke, P. Metrangolo, **A. Priimagi**, M. Giese, "Photoresponsive halogen-bonded liquid crystals: the role of aromatic fluorine substitution", *Chemistry of Materials* **2019**, 31, 462–470.

## 2018

77. M. Lahikainen, H. Zeng, **A. Priimagi**, "Reconfigurable photoactuator through synergistic use of photochemical and photothermal effects", *Nature Communications* **2018**, 9, 4148.
76. J.K. Salunke, N.A. Durandin, T.P. Ruoko, N.R. Candeias, P. Vivo, E. Vuorimaa-Laukkanen, T. Laakonen, **A. Priimagi**, "Halogen-Bond-Assisted Photoluminescence Modulation in Carbazole-Based Emitter", *Scientific Reports* **2018**, 8, 14431.
75. M. Virkki, A. Maurice, A. Forni, M. Sironi, P.F. Brevet, P. Metrangolo, M. Kauranen, **A. Priimagi**, "On molecular optical nonlinearity of halogen-bond-forming azobenzenes", *Physical Chemistry Chemical Physics* **2018**, 20, 28810–28817.
74. M. Saccone, K. Kuntze, Z. Ahmed, A. Siiskonen, M. Giese, **A. Priimagi**, "Ortho-fluorination of azophenols increases the mesophase stability of photoresponsive hydrogen-bonded liquid crystals", *Journal of Materials Chemistry C* **2018**, 6, 9958–9963.
73. M. Poutanen, Z. Ahmed, L. Rautkari, O. Ikkala, **A. Priimagi**, "Thermal Isomerization of Hydroxyazobenzenes as a Platform for Vapor Sensing", *ACS Macro Letters* **2018**, 7, 381–386.
72. P.M.J. Szell, A. Siiskonen, L. Catalano, G. Cavallo, G. Terraneo, **A. Priimagi**, D.L. Bryce, P. Metrangolo, "Halogen-bond driven self-assembly of triangular macrocycles", *New Journal of Chemistry* **2018**, 42, 10467–10471.
71. J. Vapaavuori, C. G. Bazuin, **A. Priimagi**, "Supramolecular design principles for efficient photoresponsive polymer–azobenzene complexes", *Journal of Materials Chemistry C* **2018**, 6, 2168–2188.

70. O.M. Wani, H. Zeng, P. Wasylczyk, **A. Priimagi**, "Programming photoresponse in liquid crystal polymer actuators with laser projector", *Advanced Optical Materials* **2018**, 6, 1700949.
69. H. Zeng, O.M. Wani, P. Wasylczyk, **A. Priimagi**, "Light-driven, caterpillar-inspired miniature inching robot", *Macromolecular Rapid Communications* **2018**, 39, 1700224.
68. H. Zeng, P. Wasylczyk, D.S. Wiersma, **A. Priimagi**, "Light robots: bridging the gap between microrobotics and photomechanics in soft materials", *Advanced Materials* **2018**, 30, 1703554.

## 2017

67. Z. Ahmed, A. Siiskonen, M. Virkki, **A. Priimagi**, "Controlling azobenzene photoswitching through combined ortho-fluorination and -amination", *Chemical Communications* **2017**, 53, 12520–12523.
66. P. Vivo, J. Salunke, **A. Priimagi**, "Hole-Transporting Materials for Printable Perovskite Solar Cells", *Materials* **2017**, 10, 1087.
65. J. Vapaavuori, A. Siiskonen, V. Dichiarante, A. Forni, M. Saccone, T. Pilati, C. Pellerin, A. Shishido, P. Metrangolo, **A. Priimagi**, "Supramolecular control of liquid crystals by doping with halogen-bonding dyes", *RSC Advances* **2017**, 7, 40237–40242.
64. H. Zeng, O. M. Wani, P. Wasylczyk, R. Kaczmarek, **A. Priimagi**, "Self-regulating iris based on light-actuated liquid crystal elastomer", *Advanced Materials* **2017**, 29, 1701814.
63. H. Zeng, O. M. Wani, **A. Priimagi**, "A light-driven artificial flytrap", *Nature Communications* **2017**, 8, 15546.
62. N. Karimi, M. Virkki, A. Alberucci, O. Buchnev, M. Kauranen, **A. Priimagi**, G. Assanto, "Molding optical waveguides with nematicons", *Advanced Optical Materials* **2017**, 5, 1700199.
61. D. Shinde, J. Salunke, N. R. Candeias, F. Tinti, M. Gazzano, P. Wadgaonkar, **A. Priimagi**, N. Camaioni, P. Vivo, "Crystallization-enhanced bulk hole mobility in phenothiazine-based organic semiconductors", *Scientific Reports* **2017**, 7, 46268.
60. R. Milani, N. Houbenov, F. Fernandez-Palacio, G. Cavallo, A. Luzio, J. Haataja, M. Saccone, **A. Priimagi**, O. Ikkala, P. Metrangolo, "Hierarchical self-assembly of halogen-bonded block copolymer complexes into upright cylindrical domains", *Chem* **2017**, 2, 417–426.
59. J. Stumpel, M. Saccone, V. Dichiarante, O. Lehtonen, M. Virkki, P. Metrangolo, **A. Priimagi**, "Surface Patterning of Halogen-Bonded Polymer-Azobenzene Complexes: A Concentration-Dependence Study", *Molecules* **2017**, 22, 1844.
58. M. Saccone, F. Fernandez-Palacio, G. Cavallo, V. Dichiarante, M. Virkki, G. Terraneo, **A. Priimagi**, P. Metrangolo "Photoresponsive ionic liquid crystals assembled via halogen bond: en route towards light-controllable ion transporters", *Faraday Discussions* **2017**, 203, 407–422.
57. M. Saccone, A. Siiskonen, F. Fernandez-Palacio, G. Terraneo, **A. Priimagi**, P. Metrangolo "Halogen bonding stabilizes a cis-azobenzene derivative in the solid state: A crystallographic study", *Acta Crystallographica Section B* **2017**, 73, 227–233.
56. A. Siiskonen, **A. Priimagi**, "Benchmarking DFT Methods with Small Basis Sets for the Calculation of Halogen-Bond Strengths", *Journal of Molecular Modelling* **2017**, 23, 50.
55. J. Noga, A. Sobolewska, S. Bartkiewicz, M. Virkki, **A. Priimagi**, "Periodic surface structures induced by a single laser beam irradiation", *Macromolecular Materials and Engineering* **2017**, 302, 1600329.

54. J. Wang, Y. Aihara, M. Kinoshita, J. Mamiya, A. Priimagi, A. Shishido, "Orientational optical nonlinearities in polymer-stabilized dye-doped liquid crystals", *Journal of the Japanese Liquid Crystal Society* **2017**, *21*, 57–67.

---

## 2016

53. F. Fernandez-Palacio, M. Poutanen, M. Saccone, A. Siiskonen, G. Terraneo, G. Resnati, O. Ikkala, P. Metrangolo, **A. Priimagi**, "Photoinduced phase transitions in halogen-bonded liquid crystals", *Chemistry of Materials* **2016**, *28*, 8314–8321.
52. G. Cavallo, G. Terraneo, A. Monfredini, M. Saccone, **A. Priimagi**, G. Resnati, P. Metrangolo, D. W. Bruce, "Superfluorinated ionic liquid crystals through mesomorphic, halogen-bonded anions", *Angewandte Chemie International Edition* **2016**, *55*, 6300–6304.
51. P. Hiekkataipale, T.I. Löbbling, M. Poutanen, **A. Priimagi**, V. Abetz, O. Ikkala, A.H. Gröschel, "Controlling the shape of Janus nanostructures through supramolecular modification of ABC terpolymer bulk morphologies", *Polymer* **2016**, *107*, 456–465.
50. M. Poutanen, O. Ikkala, **A. Priimagi**, "Structurally controlled dynamics in azobenzene-based supramolecular self-assemblies", *Macromolecules* **2016**, *49*, 4095–4101.
49. I. Neto, J. Andrade, A.S. Fernandes, C.P. Reis, J. K. Salunke, **A. Priimagi**, N.R. Candeias, P. Rijo, "Multicomponent Petasis-borono Mannich Preparation of Alkylaminophenols and Antimicrobial Activity Studies", *ChemMedChem* **2016**, *11*, 2015–2023.
48. N. Akamatsu, M. Aizawa, R. Tatsumi, K. Hisano, **A. Priimagi**, A. Shishido, "Photoresponsive liquid-crystalline polymer films bilayered with an inverse opal structure", *Journal of Photopolymer Science and Technology* **2016**, *29*, 145–148.
47. N. Karimi, A. Alberrucci, M. Virkki, **A. Priimagi**, M. Kauranen, G. Assanto, "Quenching nematicon fluctuations via photo-stabilization", *Photonics Letters of Poland* **2016**, *8*, 2–4.
46. F. Fernandez-Palacio, M. Saccone, **A. Priimagi**, G. Terraneo, T. Pilati, P. Metrangolo, G. Resnati, "Coordination networks incorporating halogen-bond donor sites and azo groups", *CrystEngComm* **2016**, *18*, 2251–2257.
45. M. Virkki, O. Tuominen, M. Kauranen, **A. Priimagi**, "Photoinduced nonlinear optical response in azobenzene-functionalized methylaminotriazine molecular glass", *Optics Express* **2016**, *24*, 4964–4671.
44. G. Cavallo, P. Metrangolo, R. Milani, T. Pilati, **A. Priimagi**, G. Resnati, G. Terraneo, "The halogen bond", *Chemical Reviews* **2016**, *116*, 2478–2601.

---

## 2015

43. J. Vapaavuori, I. Heikkinen, V. Dichiarante, G. Resnati, P. Metrangolo, G. Sabat, C.G. Bazuin, **A. Priimagi**, C. Pellerin, "Photomechanical energy transfer to photopassive polymers through hydrogen and halogen bonds", *Macromolecules* **2015**, *48*, 7535–7542.
42. J. Vapaavuori, R.H.A. Ras, M. Kaivola, C.G. Bazuin, **A. Priimagi**, "From partial to complete optical erasure of azobenzene-polymer gratings: effect of molecular weight", *Journal of Materials Chemistry C* **2015**, *3*, 11011–11016.
41. M. Saccone, G. Cavallo, G. Resnati, P. Metrangolo, **A. Priimagi**, "Halogen-bonded photoresponsive materials", *Topics in Current Chemistry* **2015**, *359*, 147–166.



40. M. Virkki, O. Tuominen, A. Forni, M. Saccone, P. Metrangolo, G. Resnati, M. Kauranen, **A. Priimagi**, "Halogen bonding enhances nonlinear optical response in poled supramolecular polymers", *Journal of Materials Chemistry C* **2015**, 3, 3003–3006.
39. M. Saccone, V. Dichiarante, A. Forni, A. Goulet-Hanssens, G. Cavallo, J. Vapaavuori, G. Terraneo, C.J. Barrett, G. Resnati, P. Metrangolo, **A. Priimagi**, "Supramolecular hierarchy among halogen and hydrogen bond donors in light-induced surface patterning", *Journal of Materials Chemistry C* **2015**, 3, 759–768.
38. J. Wang, Y. Aihara, M. Kinoshita, J. Mamiya, **A. Priimagi**, A. Shishido, "Laser-pointer-induced self-focusing effect in hybrid-aligned liquid-crystals", *Scientific Reports* **2015**, 5, 9890–9896.

## 2014

37. J.E. Koskela, J. Vapaavuori, R.H.A. Ras, **A. Priimagi**, "Light-driven surface patterning of supramolecular polymers with extremely low concentration of photoactive molecules", *ACS Macro Letters* **2014**, 3, 1196–1200.
36. A. Sobolewska, S. Bartkiewicz, **A. Priimagi**, "High-modulation-depth surface-relief gratings using s-s polarization configuration in supramolecular polymer-azobenzene complexes", *Journal of Physical Chemistry C* **2014**, 118, 23279–23284.
35. J. Vapaavuori, A. Goulet-Hanssens, I. Heikkinen, C.J. Barrett, **A. Priimagi**, "Are two azo groups better than one? Investigating the photoresponse of polymer-bisazobenzene complexes", *Chemistry of Materials* **2014**, 26, 5089–5096.
34. A. Goulet-Hanssens, T.C. Corkery, **A. Priimagi**, C.J. Barrett, "Effect of head group size on the photoswitching applications of azobenzene Disperse Red 1 analogues", *Journal of Materials Chemistry C* **2014**, 2, 7505–7512.
33. **A. Priimagi**, C.J. Barrett, A. Shishido, "Recent twists in photoactuation and photoalignment control", *Journal of Materials Chemistry C* **2014**, 2, 7155–7162.
32. J.E. Koskela, V. Liljeström, J. Lim, E.E. Simanek, R.H.A. Ras, **A. Priimagi**, M.A. Kostianen, "Light-fuelled transport of large dendrimers and proteins", *Journal of the American Chemical Society* **2014**, 136, 6850–6853.
31. N. Akamatsu, W. Tashiro, K. Saito, J. Mamiya, M. Kinoshita, T. Ikeda, J. Takeya, S. Fujikawa, **A. Priimagi**, A. Shishido, "Facile strain analysis of largely bending films by a surface-labelled grating method", *Scientific Reports* **2014**, 4, 5377/1-6.
30. **A. Priimagi**, A. Shevchenko, "Azopolymer-Based Micro- and Nanopatterning for Photonic Applications", *Journal of Polymer Science B: Polymer Physics* **2014**, 52, 163–182.
29. R.J. Moerland, J.E. Koskela, A. Kravchenko, S. van der Vegte, M. Simberg, M. Kaivola, **A. Priimagi**, R.H.A. Ras, "Large-area arrays of three-dimensional plasmonic subwavelength-sized structures from azopolymer surface-relief gratings", *Materials Horizons* **2014**, 1, 74–80.
28. M. Saccone, G. Terraneo, T. Pilati, G. Cavallo, **A. Priimagi**, P. Metrangolo, G. Resnati, "Azobenzene-based difunctional halogen-bond donor: towards the engineering of photoresponsive cocrystals", *Acta Crystallographica B* **2014**, B70, 149–156.

27. Y. Aihara, M. Kinoshita, J. Wang, J. Mamiya, **A. Priimagi**, A. Shishido, "Polymer stabilization enhances the orientational optical nonlinearity of oligothiophene-doped nematic liquid crystals", *Advanced Optical Materials* **2013**, *1*, 787–791.
26. **A. Priimagi**, G. Cavallo, P. Metrangolo, G. Resnati, "The halogen bond in the design of functional supramolecular materials: recent advances", *Accounts of Chemical Research* **2013**, *46*, 2686–2695.
25. J. Vapaavuori, **A. Priimagi**, A. J. Soininen, J. Ruokolainen, M. Kaivola, O. Ikkala, E. Kasëmi, N. Canilho, "Photoinduced surface patterning of azobenzene-containing supramolecular dendrons, dendrimers and dendronized polymers", *Optical Materials Express* **2013**, *3*, 711–722.
24. J. Vapaavuori, Z. Mahimwalla, R. Chromik, M. Kaivola, **A. Priimagi**, C.J. Barrett, "Nanoindentation study of light-induced softening of supramolecular and covalently functionalized azo polymers", *Journal of Materials Chemistry C* **2013**, *1*, 2806–2810.
23. **A. Priimagi**, K. Ogawa, M. Virkki, J. Mamiya, M. Kauranen, A. Shishido "High-contrast photoswitching of nonlinear optical response in crosslinked ferroelectric liquid-crystalline polymers", *Advanced Materials* **2012**, *24*, 6410–6415.
22. **A. Priimagi**, M. Saccone, G. Cavallo, A. Shishido, T. Pilati, P. Metrangolo, G. Resnati, "Photoalignment and surface-relief grating formation are efficiently combined in low-molecular-weight halogen-bonded complexes", *Advanced Materials* **2012**, *24*, OP345–OP352.
21. **A. Priimagi**, G. Cavallo, A. Forni, M. Gorynsztein-Leben, M. Kaivola, P. Metrangolo, R. Milani, A. Shishido, T. Pilati, G. Resnati, G. Terraneo, "Halogen bonding versus hydrogen bonding in driving self-assembly and performance of light-responsive supramolecular polymers", *Advanced Functional Materials* **2012**, *22*, 2572–2579.
20. Z. Mahimwalla, K.G. Yager, J. Mamiya, A. Shishido, **A. Priimagi**, C.J. Barrett, "Azobenzene photomechanics: prospects and potential application", *Polymer Bulletin*, **2012**, *69*, 967–1006, **invited review**.
19. R. Ahmed, **A. Priimagi**, C.F.J. Faul, I. Manners, "Redox-active, organometallic surface-relief gratings from azobenzene-containing polyferrocenylsilane block copolymers", *Advanced Materials* **2012**, *24*, 926–931.
18. J.E. Koskela, J. Vapaavuori, J. Hautala, **A. Priimagi**, C.F.J. Faul, M. Kaivola, R.H.A. Ras "Surface-relief gratings and stable birefringence inscribed over a broad spectral range in supramolecular polymer-bisazobenzene complexes", *Journal of Physical Chemistry C* **2012**, *116*, 2363–2370.
17. **A. Priimagi**, A. Shimamura, M. Kondo, T. Hiraoka, S. Kubo, J. Mamiya, M. Kinoshita, T. Ikeda, A. Shishido, "Location of the azobenzene moieties within the liquid-crystalline polymer network can dictate the direction of photoinduced bending", *ACS Macro Letters* **2012**, *1*, 96–99.
16. A. Shimamura, **A. Priimagi**, J. Mamiya, T. Ikeda, Y. Yu, C. J. Barrett, A. Shishido, "Simultaneous analysis of optical and mechanical properties of cross-linked azobenzene-containing liquid-crystalline polymer films", *ACS Applied Materials & Interfaces* **2011**, *3*, 4190–4196.
15. A. Shimamura, **A. Priimagi**, J. Mamiya, M. Kinoshita, T. Ikeda, A. Shishido, "Photoinduced bending upon pulsed irradiation in azobenzene-containing crosslinked liquid-crystalline polymers", *Journal of Nonlinear Optical Physics & Materials*, **2011**, *20*, 405–413.
14. M. Virkki, M. Kauranen, **A. Priimagi**, "Different chromophore concentration dependence of photoinduced birefringence and second-order susceptibility during all-optical poling", *Applied Physics Letters* **2011**, *99*, 183309-1–3.

13. J. Vapaavuori, V. Valtavirta, T. Alasaarela, J. Mamiya, **A. Priimagi**, A. Shishido, M. Kaivola, "Efficient Surface Structuring and Photoalignment of Supramolecular Polymer–Azobenzene Complexes through Rational Chromophore Design", *Journal of Materials Chemistry* **2011**, *21*, 15437–15441.
12. A. Kravchenko, A. Shevchenko, V. Ovchinnikov, **A. Priimagi**, M. Kaivola, "Optical interference lithography using azobenzene-functionalized polymers for micro- and nanopatterning of silicon", *Advanced Materials* **2011**, *23*, 4174–4177; **highlighted in Nature Photonics**.
11. T. Alasaarela, D. Zheng, L. Huang, **A. Priimagi**, B. Bai, A. Tervonen, S. Honkanen, M. Kuitinen, J. Turunen, "Single-layer one-dimensional nonpolarizing guided-mode resonance filters under normal incidence", *Optics Letters* **2011**, *36*, 2411–2413.
10. **A. Priimagi**, A. Shevchenko, M. Kaivola, F.J. Rodríguez, M. Kauranen, P. Rochon, "Exceptionally high and stable photoinduced anisotropy in guest–host polymer mediated by chromophore aggregation", *Optics Letters* **2010**, *35*, 1813–1815.
9. J. Vapaavuori, **A. Priimagi**, M. Kaivola, "Photoinduced surface-relief gratings in supramolecular bisazobenzene-polymer complexes", *Journal of Materials Chemistry* **2010**, *20*, 5260–5264.
8. **A. Priimagi**, M. Kaivola, M. Virkki, F.J. Rodríguez, M. Kauranen, "Suppression of chromophore aggregation in amorphous polymeric materials: towards more efficient photoresponsive behavior", *Journal of Nonlinear Optical Physics & Materials* **2010**, *19*, 57–73.

---

## 2005–2009

7. **A. Priimagi**, K. Lindfors, M. Kaivola, P. Rochon, "Efficient surface-relief gratings in hydrogen-bonded polymer–azobenzene complexes", *ACS Applied Materials & Interfaces* **2009**, *1*, 1183–1189.
6. M. Ivanov, **A. Priimagi**, P. Rochon, "Effect of saturation on the diffraction efficiency of holographically recorded gratings in azopolymer films", *Optics Express* **2009**, *17*, 844–849.
5. **A. Priimagi**, J. Vapaavuori, F.J. Rodríguez, C.F.J. Faul, M.T. Heino, O. Ikkala, M. Kauranen, M. Kaivola, "Hydrogen-bonded polymer–azobenzene complexes: enhanced photoinduced birefringence with high temporal stability through interplay of intermolecular interactions", *Chemistry of Materials* **2008**, *20*, 6358–6363.
4. K. Lindfors, **A. Priimagi**, T. Setälä, A. Shevchenko, A.T. Friberg, M. Kaivola, "Local polarization of tightly focused unpolarized light", *Nature Photonics* **2007**, *1*, 228–231.
3. **A. Priimagi**, M. Kaivola, F.J. Rodríguez, M. Kauranen, "Enhanced photoinduced birefringence in polymer–dye complexes: hydrogen bonding makes a difference", *Applied Physics Letters* **2007**, *90*, 121103-1–3.
2. **A. Priimagi**, S. Cattaneo, M. Kauranen, "Real-time monitoring of all-optical poling by two-beam second-harmonic generation", *Optics Letters* **2006**, *31*, 2178–2180.
1. **A. Priimagi**, S. Cattaneo, R.H.A. Ras, S. Valkama, O. Ikkala, M. Kauranen, "Polymer–dye complexes: a facile method for high doping level and aggregation control of dye molecules", *Chemistry of Materials* **2005**, *17*, 5798–5802.

---

## PATENTS AND INVENTION DISCLOSURES

8. **A. Priimagi**, C. Fedele, T. Ihalainen, "A system for cell culturing", Provisional Patent number FI20207148 (Finland), filing date **September 15, 2020**.

7. O. Wani, **A. Priimagi**, "*HUMICELL — a humidity- and temperature-sensitive system*", Invention Disclosure TKS0452020 (Tampere University), filing date **June 18, 2020**.
6. **A. Priimagi**, C. Fedele, T. Ihalainen, "*Light-reconfigurable platform*", Invention Disclosure TKS0422019 (Tampere University), filing date **March 5, 2020**.
5. M. Poutanen, O. Ikkala, **A. Priimagi**, "*Optical sensing of relative humidity, hydrogen-bonding gases and temperature using isomerization kinetics of hydroxyazobenzene derivatives*", Provisional Patent number FI20175784 (Finland), filing date **August 31, 2017**.
4. M. Poutanen, O. Ikkala, **A. Priimagi**, "*Azobenzene based sensors*", Invention Disclosure TTY4310822016 (Aalto University / Tampere University), filing date **October 17, 2016**.
3. A. Shishido, R. Tatsumi, **A. Priimagi**, Y. Kuwata, M. Fujimoto, K. Tsuruta, "*Color tunable resin*", Patent number 2012-229321 (Japan), filing date **October 16, 2012**.
2. A. Shishido, **A. Priimagi**, K. Hisano, Y. Kumagai, G. Suzuki, S. Nishimura, "*Method for manufacturing oriented film*", Patent number 2012-194598 (Japan), filing date **September 4, 2012**.
1. A. Shishido, K. Ogawa, **A. Priimagi**, M. Virkki, J. Mamiya, M. Yamada, "*Actuator for endovascular treatment*", Patent number 2012-120097 (Japan), filing date **May 25, 2012**.

## PERSONALLY GIVEN INVITED TALKS

### INTERNATIONAL CONFERENCES AND SYMPOSIA

54. **A. Priimagi**, "*Light-driven "life-like" soft actuators: what can supramolecular concepts do for you?"*", 2nd School of Supramolecular and Bio-Nanomaterials (Como, Italy) **June 2024, invited talk**.
53. **A. Priimagi**, "*OPTOSENSE - Functional Molecular Photoswitches for Optical Humidity Sensing*", Functional Molecular Photoswitches for Energy Storage and Beyond (Barcelona, Spain) **April 2024, keynote lecture**.
52. **A. Priimagi**, "*On "Life-Like" Photoactuation*", Emerging Trends in Photodynamics and Photochemistry (Mohali, India) **March 2024, keynote lecture**.
51. **A. Priimagi**, "*Light-Driven Soft Actuators: Multifunctionality and "Life-Like" Characteristics*", Supralife Second School on Bioinspired Supramolecular Assemblies (Aveiro, Portugal) **March 2024, plenary lecture**.
50. **A. Priimagi**, "*Recent twists in photopatterning & photoactuation*", 4th International Conference on Photoalignment and Photopatterning in Soft Materials (St. Petersburg, FL, USA) **December 2023, keynote lecture**.
49. **A. Priimagi**, "*Liquid crystal network actuators — inspired by life (?)*", International Liquid Crystal Elastomer Conference (Boulder, CO, USA) **October 2023, keynote lecture**.
48. **A. Priimagi**, "*Liquid crystal network actuators — inspired by life?"*, IUPAC | CHAINS 2023 Conference (The Hague, The Netherlands) **August 2023, invited talk**.
47. **A. Priimagi**, "*The benefits of polymerizing liquid crystals*", Gordon Research Conference on Liquid Crystals (Manchester, NH, USA) **June 2023, discussion leader**.

46. **A. Priimagi**, "*From scientific curiosity to prospective business — a case study on azobenzene-based humidity sensing*", Gordon Research Conference on Artificial Molecular Switches and Motors (New London, NH, USA) **June 2023, invited talk**.
45. **A. Priimagi**, "*Materials that "learn" (and beyond)*", The First MASA Materials Science Conference (Skopje, North Macedonia) **May 2023, plenary lecture**.
44. **A. Priimagi**, "*Case studies on light-driven, self-oscillating materials*", ArtMoMa Workshop on Stimuli-Responsive Dynamic Systems and Materials (Bologna, Italy) **April 2023, invited talk**.
43. **A. Priimagi**, "*On photoactuators that "learn"*", International Conference on Programmable Materials, (Berlin, Germany; hybrid conference, online participation) **July 2022, invited talk**.
42. **A. Priimagi**, "*Plastics that move, make decisions and "learn"*", Chemical Sciences in Biological Challenges Conference, (Kuopio, Finland) **June 2022, plenary lecture**.
41. **A. Priimagi**, "*Can materials "learn"?*", Pacificchem 2020, Symposium Mechanically Responsive Materials: Bridging the Gap Between Polymers and Crystals, (Honolulu, USA; online participation due to COVID) **December 2021, invited talk**.
40. **A. Priimagi**, "*Light-tunable actuators: towards programmability and autonomous decision making*", Pacificchem 2020, Symposium Macromolecular Material Design by Precision Photochemistry, (Honolulu, USA; online participation due to COVID) **December 2021, invited talk**.
39. **A. Priimagi**, "*On the "intelligence" of light-driven LCN robots*", International Liquid Crystal Elastomer Conference, (Guangzhou, China; organized as online conference) **November 2021, invited talk**.
38. **A. Priimagi**, "*On the "intelligence" of light-driven LCN robots*", ACS Fall 2021, Symposium in Honor of Dirk J. Broer, (Chicago, USA; remote participation due to COVID) **August 2021, invited talk**.
37. **A. Priimagi**, "*Light-tunable liquid crystal network actuators: towards programmability and autonomous decision making*", Nordic Physics Days, (Uppsala, Sweden; held remotely due to COVID) **August 2021, invited talk**.
36. **A. Priimagi**, "*Light-tunable liquid crystal network actuators: towards programmability and autonomous decision making*", Virtual European Symposium of Photopolymer Sciences, (held remotely due to COVID) **June 2021, invited talk**.
35. **A. Priimagi**, "*On Life-Inspired Light-Driven Robotics*", Lorenz Workshop on "autonomous behavior of living and robotic matter", (held remotely due to COVID) **March 2021, invited talk**.
34. **A. Priimagi**, "*Light-Tunable Actuators: Towards Programmability and Autonomous Decision Making*", Nanoscience Days 2020 (Jyväskylä, Finland; held remotely due to COVID) **October 2020, plenary lecture**.
33. **A. Priimagi**, "*Azobenzene Revisited: from Optical Humidity Sensing to Light-Driven Robots*", Central European Conference on Photochemistry (Bad Hofgastein, Austria) **February 2020, plenary lecture**.
32. H. Zeng, H. Zhang, M. Lahikainen, O. Ikkala, **A. Priimagi**, "*Liquid Crystal Network Actuators that Learn*", International Liquid Crystal Elastomer Conference (ILCEC2019) (Eindhoven, The Netherlands) **October 2019, invited talk**.
31. **A. Priimagi**, "*Towards autonomous, adaptive, and (re)programmable photomechanical actuators*", European Congress and Exhibition on Advanced Materials and Processes (Euromat2019) (Stockholm, Sweden) **September 2019, invited talk**.

30. **A. Priimagi**, "*Towards autonomous, adaptive, and (re)programmable photomechanical actuators*", Kick-off symposium of the German Cluster of Excellence Living, Adaptive and Energy-Autonomous Materials Systems (livMatS) (Freiburg, Germany) **September 2019, invited lecture**.
29. **A. Priimagi**, "*Towards autonomous, adaptive, and (re)programmable photomechanical actuators*", The Photonics & Electromagnetics Research Symposium (PIERS), symposium "Photosensitive Materials and Devices for Opto-mechanical Applications" (Rome, Italy) **June 2019, keynote lecture**.
28. **A. Priimagi**, "*Optical Sensing of Relative Humidity via Azobenzene Photoisomerization*", The Photonics & Electromagnetics Research Symposium (PIERS), symposium "Soft Matter Photonics: Photo-responsive Materials and Devices" (Rome, Italy) **June 2019, keynote lecture**.
27. **A. Priimagi**, "*Towards Autonomous, Adaptive, and Programmable Photomechanical Actuators*", Central European Conference on Photochemistry (Guangzhou, China) **March 2019, keynote lecture**.
26. **A. Priimagi**, "*Liquid crystal elastomer photoactuators: towards autonomy, self-regulation and reconfigurability*", The 4th ERC Grantees Conference: From Supramolecular Towards Systems Chemistry (Rehovot, Israel) **November 2018, invited talk**.
25. **A. Priimagi**, "*Liquid crystal elastomer photoactuators: towards autonomy, self-regulation and reconfigurability*", Telluride Conference Series, "Making and Breaking Bonds with Light", (Telluride, Colorado, USA) **July 2018, invited talk**.
24. **A. Priimagi**, "*Photoswitch-based humidity sensing & autonomous photoactuation — Showcasing recent research from the SPM group*", 3rd International Conference on Photoalignment and Photopatterning in Soft Materials, (Tampere, Finland) **June 2018, invited talk**.
23. **A. Priimagi**, "*Autonomous self-regulating liquid-crystal elastomer photoactuators*", 45th German Liquid Crystal Conference, (Luxembourg) **March 2018, invited talk**.
22. **A. Priimagi**, "*Optical humidity sensing based on azobenzene photoswitching*", SPIE Photonics West, Symposium "Organic Photonic Materials and Devices XX" (San Francisco, United States) **January 2018, invited talk**.
21. **A. Priimagi**, "*Autonomous self-regulated liquid-crystal elastomer actuators*", SPIE Photonics West, Symposium "Emerging Liquid Crystal Technologies XIII" (San Francisco, United States) **January 2018, invited talk**.
20. **A. Priimagi**, "*Moving polymers with light*", Doctoral School Seminar "Nanomaterials for modern technology", (Otepää, Estonia) **November 2017, invited talk**.
19. **A. Priimagi**, Hao Zeng, Owies M. Wani, "*Autonomous, self-regulating liquid-crystal elastomer photoactuators*", International Liquid-Crystal Elastomer Conference 2017, (Houston, USA) **October 2017, invited talk**.
18. **A. Priimagi**, "*Halogen-bonded photoresponsive materials: what and why*", 2nd International Conference on Photoalignment and Photopatterning in Soft Materials (Nagoya, Japan) **November 2016, invited talk**.
17. **A. Priimagi**, "*Azobenzene-based surface patterns revisited: new insights with new materials?*", SPIE Optics & Photonics, Symposium "Light manipulating Organic Materials and Devices III" (San Diego, United States) **August 2016, invited talk**.
16. **A. Priimagi**, "*Controlling order with light and light with order in liquid crystals: two case studies*", SPIE Optics & Photonics, Symposium "Liquid Crystals XX" (San Diego, United States) **August 2016, invited talk**.

15. **A. Priimagi**, "*Towards halogen-bonded photoactuators: a glimpse into the future*", 2nd International Symposium on Halogen Bonding (Göteborg, Sweden) **June 2016, invited talk**.
14. **A. Priimagi**, "*Azobenzene-based surface patterns revisited: new insights with new materials?*", 1st Middle-Eastern Materials Science Conference (Abu Dhabi, UAE) **March 2016, invited talk**.
13. **A. Priimagi**, "*Photoinduced surface patterning with azo-polymers: how can supramolecular functionalization strategies serve us?*", Annual Meeting of the German Physical Society (Regensburg, Germany) **March 2016, invited talk**.
12. **A. Priimagi**, "*Photonics and nanostructuring with azopolymers*", 13th International Conference on Frontiers of Polymers and Advanced Materials (Marrakesh, Morocco) **March 2015, invited talk**.
11. **A. Priimagi**, "*Photoinduced surface patterning in azopolymers: how can noncovalent intermolecular interactions serve us?*", 1st International Conference on Photoalignment and Photopatterning in Soft Materials (Hong Kong) **November 2014, invited talk**.
10. **A. Priimagi**, M. Saccone, G. Cavallo, G. Terraneo, G. Resnati, P. Metrangolo, "*Halogen-Bonded Light-Controllable Materials*", 1st International Symposium on Halogen Bonding (Lecce, Italy) **June 2014, invited talk**.
9. **A. Priimagi**, R. J. Moerland, A. Kravchenko, J. E. Koskela, A. Shevchenko, R. H. A. Ras, M. Kaivola, "*Azobenzene-based nanostructuring*", Novel Optical Materials and Applications 11 (Cetraro, Italy) **June 2013, invited talk**.
8. **A. Priimagi**, "*New targets and novel materials for azobenzene-based surface patterning*", 96th Canadian Chemistry Conference, Symposium on Azobenzene Research (Quebec, Canada), **May 2013, invited talk**.
7. **A. Priimagi**, A. Shishido, "*Photoinduced motions and nonlinear optical properties of azobenzene-based materials*", SPIE Optics & Photonics, Symposium "Liquid Crystals XVI" (San Diego, United States) **August 2012, invited talk**.
6. **A. Priimagi**, "*Halogen-Bonded Photoresponsive Materials*", Supramolecular Chemistry: Where Nano meets Bio (Milan, Italy) **June 2012, invited talk**.
5. **A. Priimagi**, "*Photoinduced surface patterning in azo-polymers: supramolecular control and redox activity*", 95th Canadian Chemistry Conference (Calgary, Canada) **May 2012, invited talk**.
4. **A. Priimagi**, G. Cavallo, R. Milani, G. Terraneo, G. Resnati, P. Metrangolo, A. Shimamura, J. Mamiya, A. Shishido, M. Kaivola, "*Insights into the photomechanical response of amorphous and liquid-crystalline azobenzene-containing polymer systems*", Novel Optical Materials and Applications 10 (Cetraro, Italy) **June 2011, invited talk**.
3. **A. Priimagi**, F. J. Rodriguez, J. Vapaavuori, O. Ikkala, M. Kauranen, M. Kaivola, "*Photoinduced anisotropy and surface-relief gratings in hydrogen-bonded polymer–azobenzene complexes*", 8th Japan–Finland Joint Symposium on Optics in Engineering (Tokyo, Japan) **September 2009, invited talk**.
2. **A. Priimagi**, F. J. Rodriguez, J. Vapaavuori, P. Rochon, O. Ikkala, M. Kauranen, M. Kaivola, "*Photoinduced anisotropy and surface-relief gratings in hydrogen-bonded polymer–azobenzene complexes*", Novel Optical Materials and Applications 10 (Cetraro, Italy) **June 2009, invited talk**.
1. **A. Priimagi**, S. Cattaneo, R. H. A. Ras, S. Valkama, O. Ikkala, M. Kauranen, "*Supramolecular guest–host systems: combining high dye doping level with low aggregation tendency*", SPIE Optics

& Photonics, Symposium "Linear and Nonlinear Optical Properties of Organic Materials"; Proc. SPIE Vol. 6331, 63310L/1–9 (San Diego, United States) **August 2006, invited talk.**

SCHOOLS, SEMINARS, AND FOREIGN UNIVERSITIES

29. **A. Priimagi**, "*The many faces of azobenzene-based light-responsive materials*", Department of Mechanical and Materials Engineering, (host Prof. Konstantinos Daskalakis), University of Turku, Finland **May 2024.**
28. **A. Priimagi**, "*On Halogen-Bond-Driven Functional Materials*", Polymer Science and Engineering Division, (host Prof. Prakash Wadgaonkar), CSIR-National Chemical Laboratory, Pune, India **April 2024.**
27. **A. Priimagi**, "*Light-Driven, "Life-Like" Polymer Actuators*", Department of Physics (host Prof. Pavan Kumar), IISER Pune, India **April 2024.**
26. **A. Priimagi**, "*On "Life-like" photoactuation*", School of Chemistry (host Prof. Stephen Goldup), University of Birmingham, UK **March 2024.**
25. **A. Priimagi**, "*On "Life-like" photoactuation*", Department of Chemistry (host Prof. Matthew Fuchter), Imperial College London, UK **February 2024.**
24. **A. Priimagi**, "*"Life-like" photoactuators*", Laboratory of Organic Chemistry and Functional Materials (host Prof. Stefan Hecht), Humboldt University Berlin, Germany **February 2024.**
23. **A. Priimagi**, "*Liquid crystal network actuators inspired by life (??)*", Institute of Physical Chemistry (host Profs. Johanna Bruckner, Frank Giesselmann), University of Stuttgart, Germany **January 2024.**
22. **A. Priimagi**, "*The many faces of azobenzene-based light-responsive materials*", European Laboratory for Non-Linear Spectroscopy (host Profs. Camilla Parmeggiani, Diederik Wiersma), University of Florence, Italy **November 2023, Fermi lecture.**
21. **A. Priimagi**, "*From scientific curiosity to prospective business: a case study on azobenzene-containing polymers*", Collaborative Research Center on Intelligent Matter (host Prof. Bart-Jan Ravoo), University of Münster, Germany (held remotely due to COVID) **May 2021, tutorial lecture.**
20. **A. Priimagi**, "*On light-fuelled "Intelligent" Soft Robots*", Collaborative Research Center on Intelligent Matter (host Prof. Bart-Jan Ravoo), University of Münster, Germany (held remotely due to COVID) **May 2021, invited talk.**
19. **A. Priimagi**, "*Photomechanical Actuators: From Autonomy to "Learning"*", Laboratory of Stimuli-Responsive Functional Materials & Devices (host Prof. Albert Schenning), Technical University of Eindhoven, The Netherlands **December 2019, invited talk.**
18. **A. Priimagi**, "*Towards autonomous, adaptive, and (re)programmable photomechanical actuators*", Center for Advanced Biomaterials for Healthcare CRIB (host Prof. Paolo Netti), Istituto Italiano Di Tecnologia Napoli, Italy **September 2019.**
17. **A. Priimagi**, "*Light-driven soft robots: Towards programmability and autonomous decision making*", Annual Research Seminar of HYBER Centre of Excellence (host Prof. Olli Ikkala), Aalto University, Finland, **November 2018.**
16. **A. Priimagi**, "*Moving polymers with light*", Institute of Physics (host Prof. Jaak Kikas), Tartu University, Estonia, **November 2017.**



15. **A. Priimagi**, "*Autonomous, self-regulated photoactuators*", Department of Chemistry (host Prof. Stefan Hecht), Humboldt University, Germany, October **2017**.
14. **A. Priimagi**, "*Moving polymers with light*", in "9th International Summer School New Frontiers in Optical Technologies", Tampere University of Technology, Finland, August **2017**.
13. **A. Priimagi**, "*Autonomous, self-regulated photoactuators*", Physics Brown Bag Seminar (host Prof. Peter Liljeroth), Aalto University, Finland, April **2017**.
12. **A. Priimagi**, "*The Many Faces of Azobenzene-Based Materials: Selected Examples on Photoactuation and Photoswitching*", Max Planck Institute for Polymer Research (host Dr. Si Wu), Germany, January **2017**.
11. **A. Priimagi**, "*Azobenzene Photomechanics*", Department of Chemistry (host Prof. K. Lindfors), University of Cologne, Germany, January **2017**.
10. **A. Priimagi**, "*The many faces of azobenzene photomechanics: a glimpse into the future*", Seminar "Supramolecular Soft Materials" (host Prof. P. Metrangolo), Politecnico di Milano, Italy, January **2016**.
9. **A. Priimagi**, "*Halogen-Bonded Functional Materials*", Laboratory of Organic Electronics (host Prof. M. Berggren), Linköping University, Sweden, November **2015**.
8. **A. Priimagi**, "*New targets and novel materials for azopolymer surface patterns*", Functional Organic Materials and Devices Laboratory (host Prof. A. Schenning), Technical University of Eindhoven, Netherlands, August **2015**.
7. **A. Priimagi**, "*New targets and novel materials for azopolymer surface patterns*", International Symposium of the Finnish Centre of Excellence HYBER (host Prof. Olli Ikkala), Aalto University, Finland, May **2015**.
6. **A. Priimagi**, "*New targets and novel materials for azobenzene-based surface patterning*", Laboratory of Advanced Materials (host Prof. Xiaogong Wang), Tsinghua University, China, October **2014**.
5. **A. Priimagi**, "*Halogen-bonded light-controllable materials*", Department of Materials Science and Engineering (host Prof. Haifeng Yu), Peking University, China, October **2014**.
4. **A. Priimagi**, "*Halogen-bonded photoresponsive supramolecular complexes*", Department of Applied Chemistry and Biotechnology (host Prof. Shiki Yagai), Chiba University, Japan, November **2012**.
3. **A. Priimagi**, "*Halogen-bonded photoresponsive supramolecular complexes*", Department of Applied Chemistry and Biotechnology (host Prof. Shiki Yagai), Chiba University, Japan, November **2012**.
2. **A. Priimagi**, "*Insights into the photoinduced motions in amorphous and liquid-crystalline azobenzene-containing polymer systems*", Department of Molecular Design & Engineering (host Prof. Takahiro Seki), Nagoya University, Japan, August **2011**.
1. **A. Priimagi**, "*Insights into the photoinduced motions in amorphous and liquid-crystalline azobenzene-containing polymer systems*", Center for Optical Research and Education (host Prof. Toyohiko Yatagai), Utsunomiya University, Japan, August **2011**.