



Perovskite Nanocrystal-Nanoreactors for Enhanced Light Emission

Results

Project Information

PINNACLE

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[Project website](#)

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Germany

CORDIS provides links to public deliverables and publications of HORIZON projects.

Links to deliverables and publications from FP7 projects, as well as links to some specific result types such as dataset and software, are dynamically retrieved from [OpenAIRE](#) .

Publications

[Thickness-Dependence of Exciton–Exciton Annihilation in Halide Perovskite Nanoplatelets](#) 

Author(s): Moritz Gramlich, Bernhard J. Bohn, Yu Tong, Lakshminarayana Polavarapu, Jochen Feldmann, Alexander S. Urban

Published in: The Journal of Physical Chemistry Letters, Issue 11/13, 2020, Page(s) 5361-5366, ISSN 1948-7185

Publisher: American Chemical Society

DOI: 10.1021/acs.jpcllett.0c01291

[Rapid Data-Efficient Optimization of Perovskite Nanocrystal Syntheses through Machine Learning Algorithm Fusion](#) 

Author(s): Carola Lampe, Ioannis Kouroudis, Milan Harth, Stefan Martin, Alessio Gagliardi, Alexander S. Urban

Published in: Advanced Materials, Issue 35, 2023, Page(s) 2208772, ISSN 1521-4095

Publisher: Wiley

DOI: 10.1002/adma.202208772

[Metal Halide Perovskite Nanocrystals: Synthesis, Post-Synthesis Modifications, and Their Optical Properties](#) 

Author(s): Javad Shamsi, Alexander S. Urban, Muhammad Imran, Luca De Trizio, Liberato Manna

Published in: Chemical Reviews, Issue 119/5, 2019, Page(s) 3296-3348, ISSN 0009-2665

Publisher: American Chemical Society

DOI: 10.1021/acs.chemrev.8b00644

[Dark and Bright Excitons in Halide Perovskite Nanoplatelets](#) 

Author(s): Moritz Gramlich; Michael W. Swift; Carola Lampe; John L. Lyons; Markus Döblinger; Alexander L. Efros; Peter C. Sercel; Alexander S. Urban

Published in: Advanced Science,, Issue 9, 2022, Page(s) 2103013, ISSN 2198-3844

Publisher: Wiley

DOI: 10.1002/advs.202103013

[High-Performance Monolayer MoS₂ Field-Effect Transistors on Cyclic Olefin Copolymer-Passivated SiO₂ Gate Dielectric](#) 

Author(s): Sirri Batuhan Kalkan, Emad Najafidehaghani, Ziyang Gan, Jan Drewniok, Michael F. Lichtenegger, Uwe Hübner, Alexander S. Urban, Antony George, Andrey Turchanin, Bert Nickel

Published in: Advanced Optical Materials, Issue 11, 2022, Page(s) 2201653, ISSN 2195-1071

Publisher: Wiley

DOI: 10.1002/adom.202201653

[Elucidating the performance limits of perovskite nanocrystal light emitting diodes](#)

Author(s): Thomas Morgenstern, Carola Lampe, Tassilo Naujoks, Matthew Jurow, Yi Liu, Alexander S. Urban, Wolfgang Brütting

Published in: Journal of Luminescence, Issue 220, 2020, Page(s) 116939, ISSN 0022-2313

Publisher: Elsevier BV

DOI: 10.1016/j.jlumin.2019.116939

[Cross Determination of Exciton Coherence Length in J-Aggregates](#)

Author(s): A. Jumbo-Nogales, V. Krivenkov, K. Rusakov, A. S. Urban, M. Grzelczak, and Y. P. Rakovich

Published in: The Journal of Physical Chemistry Letters, Issue 13, 2022, Page(s) 10198-10206, ISSN 1948-7185

Publisher: American Chemical Society

DOI: 10.1021/acs.jpcllett.2c02213

[Electron-Hole Binding Governs Carrier Transport in Halide Perovskite Nanocrystal Thin Films](#)

Author(s): Michael F. Lichtenegger; Jan Drewniok; Andreas Bornschlegl; Carola Lampe; Andreas Singldinger; Nina A. Henke; Alexander S. Urban

Published in: ACS Nano, Issue 16, 2022, Page(s) 6317-6324, ISSN 1936-086X

Publisher: ACS

DOI: 10.1021/acsnano.2c00369

[Fine-Tuning Blue-Emitting Halide Perovskite Nanocrystals](#)

Author(s): Stefan Martin, Nina A. Henke, Carola Lampe, Markus Döblinger, Kilian Frank, Patrick Ganswindt, Bert Nickel, Alexander S. Urban

Published in: Advanced Optical Materials, 2023, ISSN 2195-1071

Publisher: Wiley

DOI: 10.1002/adom.202301009

[Real-Time Electron and Hole Transport Dynamics in Halide Perovskite Nanowires](#)

Author(s): Lisa Janker, Yu Tong, Lakshminarayana Polavarapu, Jochen Feldmann, Alexander S. Urban, Hubert J. Krenner

Published in: Nano Letters, Issue 19/12, 2019, Page(s) 8701-8707, ISSN 1530-6984

Publisher: American Chemical Society

DOI: 10.1021/acs.nanolett.9b03396

[Thickness-Dependent Dark-Bright Exciton Splitting and Phonon Bottleneck in CsPbBr₃-Based Nanoplatelets Revealed via Magneto-Optical Spectroscopy](#)

Author(s): Shuli Wang; Mateusz Dyksik; Carola Lampe; Moritz Gramlich; Duncan K. Maude; Michał Baranowski; Alexander S. Urban; Paulina Plochocka; Alessandro Surrente

Published in: Nano Letters, Issue 22, 2022, Page(s) 7011-7019, ISSN 1530-6992

Publisher: ACS

DOI: 10.1021/acs.nanolett.2c01826

[Nonradiative Energy Transfer between Thickness-Controlled Halide Perovskite Nanoplatelets](#)

Author(s): Andreas Singldinger, Moritz Gramlich, Christoph Gruber, Carola Lampe, Alexander S. Urban

Published in: ACS Energy Letters, Issue 5/5, 2020, Page(s) 1380-1385, ISSN 2380-8195

Publisher: American Chemical Society

DOI: 10.1021/acsenergylett.0c00471

[Doubly Stabilized Perovskite Nanocrystal Luminescence Downconverters](#)

Author(s): Qi Xue; Carola Lampe; Tassilo Naujoks; Kilian Frank; Moritz Gramlich; Markus Schoger; Willem Vanderlinden; Patrick Reisbeck; Bert Nickel; Wolfgang Brütting; Alexander S. Urban

Published in: Advanced Optical Materials, Issue 10, 2022, Page(s) 2102791, ISSN 2195-1071

Publisher: Wiley

DOI: 10.1002/adom.202102791

[Dark-Bright Exciton Splitting Dominates Low-Temperature Diffusion in Halide Perovskite Nanocrystal Assemblies](#)

Author(s): Andreas J. Bornschlegl, Michael F. Lichtenegger, Leo Lubber, Carola Lampe, Maryna I. Bodnarchuk, Maksym V. Kovalenko & Alexander S. Urban

Published in: Advanced Energy Materials, Issue just accepted, 2024, ISSN 1614-6840

Publisher: Wiley

DOI: 10.1002/aenm.202303312

[Polymer Nanoreactors Shield Perovskite Nanocrystals from Degradation](#)

Author(s): Verena A. Hintermayr, Carola Lampe, Maximilian Löw, Janina Roemer, Willem Vanderlinden, Moritz Gramlich, Anton X. Böhm, Cornelia Sattler, Bert Nickel, Theobald Lohmüller, Alexander S. Urban

Published in: Nano Letters, Issue 19/8, 2019, Page(s) 4928-4933, ISSN 1530-6984

Publisher: American Chemical Society

DOI: 10.1021/acs.nanolett.9b00982

[Boosting Tunable Blue Luminescence of Halide Perovskite Nanoplatelets through Postsynthetic Surface Trap Repair](#) 

Author(s): Bernhard J. Bohn, Yu Tong, Moritz Gramlich, May Ling Lai, Markus Döblinger, Kun Wang, Robert L. Z. Hoyer, Peter Müller-Buschbaum, Samuel D. Stranks, Alexander S. Urban, Lakshminarayana Polavarapu, Jochen Feldmann
Published in: Nano Letters, Issue 18/8, 2018, Page(s) 5231-5238, ISSN 1530-6984

Publisher: American Chemical Society

DOI: 10.1021/acs.nanolett.8b02190

[Identifying and Reducing Interfacial Losses to Enhance Color-Pure Electroluminescence in Blue-Emitting Perovskite Nanoplatelet Light-Emitting Diodes](#) 

Author(s): Robert L. Z. Hoyer, May-Ling Lai, Miguel Anaya, Yu Tong, Krzysztof Gałkowski, Tiarnan Doherty, Weiwei Li, Tahmida N. Huq, Sebastian Mackowski, Lakshminarayana Polavarapu, Jochen Feldmann, Judith L. MacManus-Driscoll, Richard H. Friend, Alexander S. Urban, Samuel D. Stranks

Published in: ACS Energy Letters, Issue 4/5, 2019, Page(s) 1181-1188, ISSN 2380-8195

Publisher: American Chemical Society

DOI: 10.1021/acsenergylett.9b00571

[Tuning the optical bandgap in layered hybrid perovskites through variation of alkyl chain length](#) 

Author(s): Jasmina A. Sichert, Annick Hemmerling, Carlos Cardenas-Daw, Alexander S. Urban, Jochen Feldmann

Published in: APL Materials, Issue 7/4, 2019, Page(s) 041116, ISSN 2166-532X

Publisher: American Institute of Physics (AIP) Publishing

DOI: 10.1063/1.5087296

[Accelerated Carrier Relaxation through Reduced Coulomb Screening in Two-Dimensional Halide Perovskite Nanoplatelets](#) 

Author(s): Verena A. Hintermayr, Lakshminarayana Polavarapu, Alexander S. Urban, Jochen Feldmann

Published in: ACS Nano, Issue 12/10, 2018, Page(s) 10151-10158, ISSN 1936-0851

Publisher: American Chemical Society

DOI: 10.1021/acsnano.8b05029

[Energy Transfer in Stability-Optimized Perovskite Nanocrystals](#) 

Author(s): Michèle G. Greiner; Andreas Singldinger; Nina A. Henke; Carola Lampe; Ulrich Leo; Moritz Gramlich; Alexander S. Urban

Published in: Nano Letters, Issue 22, 2022, Page(s) 6709-6715, ISSN 1530-6992

Publisher: ACS

DOI: 10.1021/acs.nanolett.2c02108

[Lead-free, luminescent perovskite nanocrystals obtained through ambient condition synthesis](#) 

Author(s): Treber, Fiona; Frank, Kilian; Nickel, Bert; Lampe, Carola; Urban, Alexander S.

Published in: Small, Issue 19, 2023, Page(s) 2300525, ISSN 1613-6829

Publisher: Wiley

DOI: 10.48550/arxiv.2301.08936

[How Exciton-Phonon Coupling Impacts Photoluminescence in Halide Perovskite Nanoplatelets.](#) 

Author(s): Moritz Gramlich; Carola Lampe; Jan Drewniok; Alexander S. Urban

Published in: The Journal of Physical Chemistry Letters, Issue 12, 2021, Page(s) 11371-11377, ISSN 1948-7185

Publisher: American Chemical Society

DOI: 10.1021/acs.jpcllett.1c03437

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[Lead-free, luminescent perovskite nanocrystals obtained through ambient condition synthesis](#) 

Author(s): Treber, Fiona; Frank, Kilian; Nickel, Bert; Lampe, Carola; Urban, Alexander S.

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