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Qualifications

Solar Cells, Ph.D., Uppsala University
2007 → 2012
Award Date: 2012 Mar 31

Employment

Associate senior lecturer

Chemical Physics
Lund University
Lund, Sweden
2015 Sep 21 → present

Principal investigator

NanoLund: Center for Nanoscience
Lund University
Lund, Sweden
2014 Jan 1 → present

Associate senior lecturer

LTH Profile Area: Nanoscience and Semiconductor
Lund University
Sweden
2020 Jun 26 → present

Young Investigator Group Leader

Helmholtz Association of German Research Centers
Berlin, Germany
2017 Mar 1 → present

Research outputs

PTB7 as an Ink-Additive for Spin-Coated Versus Inkjet-Printed Perovskite Solar Cells

Pathak, C. S., Paramasivam, G., Mathies, F., Hirselandt, K., Schröder, V., Maus, O., Dagar, J., Klimm, C., Unger, E. & Visoly-Fisher, I., 2022 Apr, In: ACS Applied Energy Materials. 5, 4, p. 4085-4095 11 p.

An open-access database and analysis tool for perovskite solar cells based on the FAIR data principles

Jacobsson, T. J., Baumann, F., Unger, E. & et al., 2022, In: Nature Energy. 7, p. 107-115 9 p.

The Perovskite Database Project: A Perspective on Collective Data Sharing

Unger, E. & Jacobsson, T. J., 2022, In: ACS Energy Letters. 7, 3, p. 1240-1245 6 p.

Temperature-Dependent Crystallization Mechanisms of Methylammonium Lead Iodide Perovskite From Different Solvents

Shargaieva, O., Näsström, H., Li, J., Többens, D. M. & Unger, E. L., 2021 Nov 23, In: Frontiers in Energy Research. 9, 749604.

Using Combinatorial Inkjet Printing for Synthesis and Deposition of Metal Halide Perovskites in Wavelength-Selective Photodetectors

Schröder, V. R. F., Hermerschmidt, F., Helper, S., Reherrmann, C., Ligorio, G., Näsström, H., Unger, E. L. & List-Kratochvil, E. J. W., 2021 Nov 16, (E-pub ahead of print) In: Advanced Engineering Materials.

Inducing ferroelastic domains in single-crystal CsPbBr₃ perovskite nanowires using atomic force microscopy

Marçal, L. A. B., Benter, S., Irish, A., Dzhigayev, D., Oksenberg, E., Rothman, A., Sanders, E., Hammarberg, S., Zhang, Z., Sala, S., Björling, A., Unger, E., Mikkelsen, A., Joselevich, E., Timm, R. & Wallentin, J., 2021 Jun 1, In: Physical Review Materials. 5, 6, L063001.

Deconvoluting Energy Transport Mechanisms in Metal Halide Perovskites Using CsPbBr₃ Nanowires as a Model System

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Stability assessment of p-i-n perovskite photovoltaic mini-modules utilizing different top metal electrodes

Dagar, J., Paramasivam, G., Klimm, C., Fenske, M., Schultz, C., Schlatmann, R., Stegemann, B. & Unger, E., 2021 Apr 1, In: Micromachines. 12, 4, 423.

Improved Electrical Performance of Perovskite Photovoltaic Mini-Modules through Controlled Pbl₂ Formation Using Nanosecond Laser Pulses for P3 Patterning

Fenske, M., Schultz, C., Dagar, J., Kosasih, F. U., Zeiser, A., Junghans, C., Bartelt, A., Ducati, C., Schlatmann, R., Unger, E. & Stegemann, B., 2021 Apr, In: Energy Technology. 9, 4, 8 p., 2000969.

Vertically Aligned CsPbBr₃ Nanowire Arrays with Template-Induced Crystal Phase Transition and Stability

Zhang, Z., Suchan, K., Li, J., Hetherington, C., Kiligaris, A., Unger, E., Scheblykin, I. G. & Wallentin, J., 2021 Feb 11, In: Journal of Physical Chemistry C. 125, 8, p. 4860-4868 9 p.

20.8% Slot-Die Coated MAPbI₃ Perovskite Solar Cells by Optimal DMSO-Content and Age of 2-ME Based Precursor Inks

Li, J., Dagar, J., Shargaieva, O., Flatken, M. A., Köbler, H., Fenske, M., Schultz, C., Stegemann, B., Just, J., Többens, D. M., Abate, A., Munir, R. & Unger, E., 2021, In: Advanced Energy Materials. 11, 10, 2003460.

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Gas flow-assisted vacuum drying: Identification of a novel process for attaining high-quality perovskite films

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Optical Fingerprints of Polynuclear Complexes in Lead Halide Perovskite Precursor Solutions

Valencia, A. M., Shargaieva, O., Schier, R., Unger, E. & Cocchi, C., 2021, In: Journal of Physical Chemistry Letters. 12, 9, p. 2299-2305 7 p.

One-pot synthesis of a stable and cost-effective silver particle-free ink for inkjet-printed flexible electronics

Yang, W., Mathies, F., Unger, E. L., Hermerschmidt, F. & List-Kratochvil, E. J. W., 2020 Dec 14, In: Journal of Materials Chemistry C. 8, 46, p. 16443-16451 9 p.

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Perovskite solar cell performance assessment

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2-Terminal CIGS-perovskite tandem cells: A layer by layer exploration

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Origin of Ionic Inhomogeneity in $\text{MAPb}(\text{I}_x\text{Br}_{1-x})_3$ Perovskite Thin Films Revealed by In-Situ Spectroscopy during Spin Coating and Annealing

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Ablation mechanisms of nanosecond and picosecond laser scribing for metal halide perovskite module interconnection – An experimental and numerical analysis

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Dependence of phase transitions on halide ratio in inorganic $\text{CsPb}(\text{Br}_x\text{I}_{1-x})_3$ perovskite thin films obtained from high-throughput experimentation

Näsström, H., Becker, P., Márquez, J. A., Shargaieva, O., Mainz, R., Unger, E. & Unold, T., 2020, In: Journal of Materials Chemistry A. 8, 43, p. 22626-22631 6 p.

Excitation wavelength dependence of photoluminescence flickering in degraded MAPbI_3 perovskite and its connection to lead iodide formation

Kiligiridis, A., Merdasa, A., Rehermann, C., Unger, E. L. & Scheblykin, I. G., 2020, In: Journal of Luminescence. 222, 117129.

Finally, inkjet-printed metal halide perovskite LEDs-utilizing seed crystal templating of salty PEDOT:PSS

Hermerschmidt, F., Mathies, F., Schröder, V. R. F., Rehermann, C., Morales, N. Z., Unger, E. L. & List-Kratochvil, E. J. W., 2020, In: Materials Horizons. 7, 7, p. 1773-1781 9 p.

Hybrid perovskite crystallization from binary solvent mixtures: interplay of evaporation rate and binding strength of solvents

Shargaieva, O., Näsström, H., Smith, J. A., Töbrens, D., Munir, R. & Unger, E., 2020, In: Materials Advances. 1, 9, p. 3314-3321 8 p.

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Current-voltage analysis: Lessons learned from hysteresis

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Impact of Excess Lead Iodide on the Recombination Kinetics in Metal Halide Perovskites

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Cs_xFA_{1-x}Pb(I_{1-y}Br_y)₃ Perovskite Compositions: The Appearance of Wrinkled Morphology and its Impact on Solar Cell Performance

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För ett bättre Lunds universitet nu

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