

Scientific references (CL-SEM)

2021

1. **Imaging Nonradiative Point Defects Buried in Quantum Wells Using Cathodoluminescence**, Thomas F. K. Weatherley, Wei Liu, Vitaly Osokin, Duncan T. L. Alexander, Robert A. Taylor, Jean - Francois Carlin, Raphael Butte, and Nicolas Grandjean, **Nano Lett.** **2021**
<https://doi.org/10.1021/acs.nanolett.1c01295>
2. **Multimodal host – guest complexation for efficient and stable perovskite photovoltaics**, Zhang, H., Eickemeyer, F. T., Zhou, Z., Mladenovic, M., Jahanbakhshi, F., Merten, L., ... & Gratzel, M. (2021). **Nature Communications**, **12(1)**, 1-11.
<https://doi.org/10.1038/s41467-021-23566-2>
3. **A Photonic Atom Probe Analysis of the Effect of Extended and Point Defects on the Luminescence of InGaN/GaN Quantum Dots**, I. Dimkou, J. Houard, N. Rochat, P. Dalapati, E. Di Russo, D. Cooper, A. Grenier, E. Monroy, and L. Rigutti, **arXiv preprint arXiv:2106.03649**.
<https://arxiv.org/abs/2106.03649v1>
4. **Over 15% efficient wide-band-gap Cu(In,Ga)S₂ solar cell: Suppressing bulk and interface recombination through composition engineering**, Sudhanshu Shukla, Mohit Sood, Damilola Adeleye, Sean Peedle, Gunnar Kusch, Diana Dahliah, Michele Melchiorre, Gian-Marco Rignanese, Geoffroy Hautier, Rachel Oliver, Susanne Siebentritt, **Joule**, Available online 7 June 2021
<https://doi.org/10.1016/j.joule.2021.05.004>
5. **Imaging CdCl₂ Defect Passivation and Formation in Polycrystalline CdTe Films by Cathodoluminescence**, Thomas Bidaud, John Moseley, Mahisha Amarasinghe, Mowafak Al-Jassim, Wyatt K. Metzger, and Stephane Collin, **Phys. Rev. Materials** **5**, 064601
<https://pubs.acs.org/doi/10.1021/acsami.7b18963>
6. **Electron beam probing of non-equilibrium carrier dynamics in 18 MeV alpha particle- and 10 MeV proton-irradiated Si-doped β -Ga₂O₃ Schottky rectifiers**, Modak, Sushrut, Chernyak, Leonid, Schulte, Alfons, et al., **Applied Physics Letters**, 2021, vol. 118, no 20, p. 202105
<https://aip.scitation.org/doi/full/10.1063/5.0052601>

7. **Exceeding 200ns Lifetimes in Polycrystalline CdTe Solar Cells**, Ablekim, T., Duenow, J. N., Perkins, C. L., Moseley, J., Zheng, X., Bidaud, T. & Metzger, W. K., **Solar RRL (2021)**
<https://doi.org/10.1002/solr.202100173>
8. **Using pulsed mode scanning electron microscopy for cathodoluminescence studies on hybrid perovskite films**, Orri, J. F., Tennyson, E. M., Kusch, G., Divitini, G., Macpherson, S., Oliver, R., Ducati, C., Stranks, S., **Nano Express (2021)**.
<https://iopscience.iop.org/article/10.1088/2632-959X/abfe3c/meta>
9. **Observation of Strong Coupling between an Inverse Bowtie Nano-Antenna and a Single J-aggregate**, A.Weissman, M.Shukharev, A.Salomon, **arXiv preprint arXiv:2104.10524 (2021)**.
<https://arxiv.org/abs/2104.10524>
10. **Imaging non-radiative point defects buried in quantum wells using cathodoluminescence**, T. F. K. Weatherley, W. Liu, V. Osokin, D. T. L. Alexander, R. A. Taylor, J.-F. Carlin, R. Butte, N. Grandjean, **arXiv preprint arXiv:2103.09702 (2021)**
<https://arxiv.org/abs/2103.09702>
11. **Point Defects in InGaN/GaN Core–Shell Nanorods: Role of the Regrowth Interface**, K. Loeto, G. Kusch, P-M. Coulon, SM. Fairclough, E. Le Boulbar, I. Girgel, PA. Shields and RA. Oliver, **Nano Express 2 (2021) 014005**
<https://iopscience.iop.org/article/10.1088/2632-959X/abe990/meta>
12. **Anisotropic and low damage III-V/Ge heterostructure etching for multijunction solar cell fabrication with passivated sidewalls**, M. de Lafontaine, E. Pargon, G. Gay, C. Petit-Etienne, S. David, J-P. Barnes, N. Rochat, A. Jaouad, M. Volatier, S. Fafard, V. Aimez, M. Darnon, **Micro and Nano Engineering (2021): 100083**.
<https://www.sciencedirect.com/science/article/pii/S2590007221000046>
13. **Quantitative Assessment of Carrier Density by Cathodoluminescence. I. GaAs Thin Films and Modeling**, H.-L. Chen, A. Scaccabarozzi, R. de Lepinau, F. Oehler, A. Lemaitre, J.-C. Harmand, A. Cattoni, S. Collin, **Phys. Rev. Applied 15, 024006 (2021)**.
<https://journals.aps.org/prapplied/abstract/10.1103/PhysRevApplied.15.024006>
14. **Quantitative Assessment of Carrier Density by Cathodoluminescence. II. GaAs Nanowires**, H.-L. Chen, R. de Lepinau, A. Scaccabarozzi, F. Oehler, J.-C. Harmand, A. Cattoni, S. Collin, **Phys. Rev. Applied 15, 024007 (2021)**.

<https://journals.aps.org/prapplied/abstract/10.1103/PhysRevApplied.15.024007>

- 15. Investigation of sidewall damage induced by reactive ion etching on AlGaInP MESA for micro-LED application**, Y. Boussadi, N. Rochat, J.-P. Barnes, B. Ben Bakir, P. Ferrandis, B. Masenelli, C. Licitra, *Journal of Luminescence* (2021): 117937.

<https://www.sciencedirect.com/science/article/abs/pii/S0022231321000533>

2020

- 16. Growth and characterisation of earth-abundant semiconductor nanostructures for solar energy harvesting**, Escobar Steinvall, S. R., (2020). (Thesis No. 8213). EPFL.

<https://infoscience.epfl.ch/record/282133>

- 17. Halide Homogenization for High-Performance Blue Perovskite Electroluminescence**, L. Cheng, C. Yi, Y. Tong, L. Zhu, G. Kusch, X. Wang, X. Wang, T. Jiang, H. Zhang, J. Zhang, C. Xue, H. Chen, W. Xu, D. Liu, R.A. Oliver, R.H. Friend, L. Zhang, N. Wang, W. Huang, J. Wang, *AAAS Research*, Volume 2020, Article ID 9017871

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7877380/>

- 18. Mechanical stress in InP and GaAs ridges formed by reactive ion etching**, J.P. Landesman, M. Fouchier, E. Pargon, S. Gerard, N. Rochat, C. Levallois, C. Levallois, M. Mokhtari, P. Pagnod-Rossiaux, F. Laruelle, C. Petit-Etienne, M. Bettiati, J. Jimenez, D.T. Cassidy *Journal of Applied Physics*, 128(22), 225705 (2020).

<https://aip.scitation.org/doi/abs/10.1063/5.0032838>

- 19. Advances in Cathodoluminescence: Recent steps toward Semiconductor Fabs and FA Labs**, C. Monachon, M. Davies, *ADFAAO*, (2020), 4:28-33

[https://compoundsemiconductor.net/article/112503/Scrutinising GaN HEMTs By Quantitative Cathodoluminescence/feature](https://compoundsemiconductor.net/article/112503/Scrutinising_GaN_HEMTs_By_Quantitative_Cathodoluminescence/feature)

- 20. Investigation of the effect of the doping order in GaN nanowire p-n junctions grown by molecular-beam epitaxy**, O. Saket, J. Wang, N. Amador-Mendez, M. Morass, A. K. Kunti, F. Bayle, S. Collin, A. Jollivet, A. Babichev, T. Sodhi, J.-C. Harmand, F. Julien, N. Gogneau, M. Tchernycheva, *Nanotechnology*, 2020

<https://iopscience.iop.org/article/10.1088/1361-6528/abc91a/meta>

- 21. Correlated optical and electrical analyses of inhomogeneous core/shell InGaN/GaN nanowire light emitting diodes**, H. Zhang, V. Piazza, V. Neplokh, N. Guan, F. Bayle, S. Collin, L. Largeau, A. Babichev, F. H Julien, M. Tchernycheva, **Nanotechnology** **32** 105202
<https://iopscience.iop.org/article/10.1088/1361-6528/abc70e/meta>
- 22. Cathodoluminescence spatially resolves optical transitions in thick group-III and N-polar InGaN films**, A. Bansa, J. M. Redwing, Z. Y. Al Balushi, **J. Appl. Phys.** **128**, 175305 (2020)
<https://doi.org/10.1063/5.0025361>
- 23. Efficient light-emitting diodes from mixed-dimensional perovskites on a fluoride interface**, B. Zhao, Y. Lian, L. Cui, G. Divitini, G. Kusch, E. Ruggeri, F. Auras, W. Li, D. Yang, B. Zhu, R. A. Oliver, J. L. MacManus-Driscoll, S. D. Stranks, D. Di, R. H. Friend, **Nat Electron** (2020).
<https://doi.org/10.1038/s41928-020-00487-4>
- 24. Cathodoluminescence Nanoscopy of 3D Plasmonic Networks**, R. Ron, M.S. Zielinski, A. Salomon, **Nano Lett.** 2020, **20**, **11**, 8205–8211
<https://pubs.acs.org/doi/abs/10.1021/acs.nanolett.0c03317>
- 25. InGaN Quantum Dots Studied by Correlative Microscopy Techniques for Enhanced Light-Emitting Diodes**, I. Dimkou, E. Di Russo, P. Dalapati, J. Houard, N. Rochat, D. Cooper, E. Bellet-Amarlic, A. Grenier, E. Monroy, L. Rigutti, **ACS Appl. Nano Mater.** 2020, **3**, **10**, 10133–10143
<https://pubs.acs.org/doi/abs/10.1021/acsanm.0c02106>
- 26. Heterotwin Zn3P2 superlattice nanowires: the role of indium insertion in the superlattice formation mechanism and their optical properties**, S. Escobar Steinvall, L. Ghisalberty, R.R. Zamani, N. Tappy, F.S. Hage, E. Stutz, M. Zamani, R. Paul, J.-B. Leran, Q.M. Ramasse, W.C. Carter, A. Fontcuberta i Morral, **arXiv preprint arXiv:2009.01533**, 2020
<https://pubs.rsc.org/fa/content/articlehtml/2020/nr/d0nr05852a>
- 27. Impact of electron injection on carrier transport and recombination in unintentionally doped GaN**, Modak, S., Chernyak, L., Xian, M., Ren, F., Pearton, S. J., Khodorov, S., Lubomirsky, I., Dashevsky, Z, **Journal of Applied Physics**, 128(8), 085702 (2020).
<https://aip.scitation.org/doi/abs/10.1063/5.0017742>

28. CVT and PVT growth and characterization of GaS crystals, Attolini, G., Negri, M., Besagni, T., Pecz, B., & Cora, I, **Materials Science and Engineering: B**, 261, 114623 (2020).

<https://www.sciencedirect.com/science/article/abs/pii/S0921510720301306>

29. Recombination-enhanced dislocation climb in InAs quantum dot lasers on silicon, K. Mukherjee, J. Selvidge, D. Jung et al. , **Journal of Applied Physics**, 2020, vol.128, no.2, p.025703.

<https://aip.scitation.org/doi/abs/10.1063/1.5143606>

30. Optical properties and carrier dynamics in Co-doped ZnO nanorods, A K.Sivan, A.Galan-Gonzalez, L.Di Mario, N.Tappy, J.Hernandez-Ferrer, D.Catone, S.Turchini, A.M.Benito, W.K.Maser, S.Escobar Steinvall, A.Fontcuberta i Morral, A.Gallant, D.A.Zeze, D.Atkinson, F.Martelli, **arXiv preprint arXiv:2006.16740**, 2020.

<https://pubs.rsc.org/en/content/articlelanding/na/2021/d0na00693a#!divAbstract>

31. Continuous and Time-Resolved Cathodoluminescence Studies of Electron Injection Induced Effects in Gallium Nitride, S.Modak, L.Chernyak, I.Lubomirsky, S.Khodorov, In: Palestini C. (eds), **Advanced Technologies for Security Applications**. NATO Science for Peace and Security Series B: Physics and Biophysics. Springer, Dordrecht (2020)

https://link.springer.com/chapter/10.1007/978-94-024-2021-0_11

32. Facet-driven formation of axial and radial In(Ga)As clusters in GaAs nanowires, A. Balgarkashi, S.Ramanandan, N.Tappy, W.Kim, L.Guniat, M.Friedl, N.Morgan, D.Dede, J-B. Leran, A.Fontcuberta i Morra, **J. Opt.** **22** 084002 (2020)

<https://iopscience.iop.org/article/10.1088/2040-8986/ab9aad/meta>

33. Defect Filtering for Thermal Expansion Induced Dislocations in III-V Lasers on Silicon, Selvidge, J., Norman, J., Hughes, E. T., Shang, C., Jung, D., Taylor, A. A. & Mukherjee, K., 2020, **arXiv preprint arXiv:2005.06066**

<https://aip.scitation.org/doi/abs/10.1063/5.0023378>

34. Effect of Strains and V-Shaped Pit Structures on the Performance of GaN-Based Light-Emitting Diodes, Chen, Shuo-Wei, Chang, Chia-Jui, Lu, Tien-Chang. **Crystals**, 2020, vol. 10, no 4, p. 311.

<https://www.mdpi.com/2073-4352/10/4/311>

35. **Contactless Investigation of the p-Type Doping Concentration Level of Single Micrometric Size GaAs Crystals Grown on Silicon for Multijunction Solar Cells**, A.Jaffre, J.Alvarez, H.-L.Chen, H.Makhloufi, C.Renard, F.Loete, S.Collin, J.P.Connolly, J.-P.Kleider, D.Mencaraglia, **35th European Photovoltaic Solar Energy Conference and Exhibition (EU-PVSEC), EU PVSEC**, Sep 2018, Bruxelles, Belgium. pp.660 – 664 (2020).

<https://hal.archives-ouvertes.fr/hal-01936835/>

36. **Characterization of micro-pixelated InGaP/AlGaInP quantum well structures**, Y.Boussadi, N.Rochat, J.P.Barnes, B.B.Bakir, P.Ferrandis, B.Masenelli, C.Licitra. *Light-Emitting Devices, Materials, and Applications XXIV* (Vol. 11302, p. 1130221)., **International Society for Optics and Photonics (2020)**.

<https://doi.org/10.1117/12.2544350>

37. **X-Ray Diffraction Micro-Strain Analysis for Extraction of Threading Dislocation Density of GaN Films Grown on Silicon, Sapphire and SiC Substrates**, Victor Yon, Nevine Rochat, Matthew Charles, Emmanuel Nolot, Patrice Gergaud, *Phys. Status Solidi B*, **257: 1900579 (2020)**

<https://onlinelibrary.wiley.com/doi/abs/10.1002/pssb.201900579>

38. **Quantitative Nanoscale Absorption Mapping: A Novel Technique To Probe Optical Absorption of Two-Dimensional Materials**, Marco Negri, Luca Francaviglia, Dumitru Dumcenco, Matteo Bosi, Daniel Kaplan, Venkataraman Swaminathan, Giancarlo Salviati, Andras Kis, Filippo Fabbri, Anna Fontcuberta i Morral, *Nano Lett.* **2020, 20, 1, 567-576**

<https://pubs.acs.org/doi/abs/10.1021/acs.nanolett.9b04304>

39. **Multiple morphologies and functionality of nanowires made from earth-abundant zinc phosphide**, S. Escobar Steinvall, N. Tappy, M. Ghasemi, R. R. Zamani, T. LaGrange, E.Z. Stutz, J-B. Leran, M. Zamani, R. Paula and A. Fontcuberta i Morral, *Nanoscale Horiz.*, **2020, 5, 274**

<https://pubs.rsc.org/no/content/articlehtml/2019/nh/c9nh00398c>

2019

40. **Visualization of Plasmon-Induced Hot Electrons by Scanning Electron Microscopy**, Elad Segal, Matan Galanty, Hannah Aharon, and Adi Salomon, *J. Phys. Chem. C*, **2019, 123, 50, 30528–30535**

<https://pubs.acs.org/doi/abs/10.1021/acs.jpcc.9b08202>

41. Single-Crystalline γ -Ga₂S₃ Nanotubes via Epitaxial Conversion of GaAs Nanowires, Eli Sutter, Jacob S. French, Akshay Balgarkashi, Nicolas Tappy, Anna Fontcuberta i Morral, Juan Carlos Idrobo, Peter Sutter, *Nano Lett.* **2019**, , **19**, **12**, 8903–8910

<https://pubs.acs.org/doi/abs/10.1021/acs.nanolett.9b03783>

42. Quantitative Assessment of Carrier Density by Cathodoluminescence (1): GaAs thin films and modeling, Hung-Ling Chen, Andrea Scaccabarozzi, Romaric De Lepinau, Fabrice Oehler, Aristide Lemaître, Jean-Christophe Harmand, Andrea Cattoni, Stephane Collin, *Condensed Matter*, 2019, arXiv:1909.05598

<https://journals.aps.org/prapplied/abstract/10.1103/PhysRevApplied.15.024006>

43. Nanoporous Metallic Network as a Large-Scale 3D Source of Second Harmonic Light, Racheli Ron, Omer Shavit, Hannah Aharon, Marcin Zielinski, Matan Galanty, and Adi Salomon, *Journal of Physical Chemistry*, DOI: 10.1021/acs.jpcc.9b06300 (2019)

<https://pubs.acs.org/doi/abs/10.1021/acs.jpcc.9b06300>

44. Non-radiative recombination at dislocations in InAs quantum dots grown on silicon, Jennifer Selvidge, Justin Norman, Michael E. Salmon, Eamonn T. Hughes , John E. Bowers, Robert, Herrick, and Kunal Mukherjee, *Appl. Phys. Lett.*, 115, 131102 (2019)

<https://aip.scitation.org/doi/abs/10.1063/1.5113517>

45. Increasing N content in GaNAsP nanowires suppresses the impact of polytypism on luminescence, Mattias Jansson, Luca Francaviglia, Rui La, Roman Balagula, Jan E. Stehr, Charles W. Tu, Anna Fontcuberta i Morral, Weimin M. Chen, and Irina A. Buyanova, *Nanotechnologies*, 2019 Jun 26;30(40):405703

<https://iopscience.iop.org/article/10.1088/1361-6528/ab2cdb/meta>

46. Planck's generalised radiation law and its implications for cathodoluminescence spectra, B.G. Mendis, *Ultramicroscopy*, 204 (2019) 73–80

<https://www.sciencedirect.com/science/article/abs/pii/S0304399119300075>

47. Electroluminescence of Single InGaN/GaN Micropyramids, Babichev, A.V., Denisov, D.V., Lavenus, P. et al., **Opt. Spectrosc.** (2019) 126: 118.

<https://link.springer.com/article/10.1134/S0030400X19020036>

48. GaAs (111) epilayers grown by MBE on Ge (111): twin reduction and polarity, D. Pelati, G. Patriarche, O. Mauguin, L. Largeau, L. Travers, F. Brisset, F. Glas, F. Oehler, **Journal of Crystal Growth**, Volume 519, 1 August 2019, Pages 84-90

<https://www.sciencedirect.com/science/article/pii/S0022024819302611>

49. III-V Integration on Si(100): Vertical Nanospades, L. Güniat, S. Martí-Sánchez, O. Garcia, M. Boscardin, D. Vindice, N. Tappy, M. Friedl, W. Kim, M. Zamani, L. Francaviglia, A. Balgarkashi, J.-B. Leran, J. Arbiol, A. Fontcuberta i Morral, **ACS Nano**, 2019, 13, 55833-5840

<https://pubs.acs.org/doi/abs/10.1021/acsnano.9b01546>

50. Optical and structural properties of dislocations in InGaN, F.C-P. Massabuau, M.K. Horton, E. Pearce, S. Hammersley, P. Chen, M.S. Zielinski, T.F.K. Weatherley, G. Divitini, P.R. Edwards, M.J. Kappers, C. McAleese, M.A. Moram, C.J. Humphreys, P. Dawson and R.A. Oliver, **Journal of Applied Physics**. 125, 165701 (2019)

<https://aip.scitation.org/doi/abs/10.1063/1.5084330>

51. Correlated optical and structural analyses of individual GaAsP/GaP core-shell nanowires, C. Himwas, S. Collin, H.-L. Chen, G. Patriarche, F. Oehler, L. Travers, O. Saket, F. H. Julien, J.-C. Harmand, M. Tchernycheva, **Nanotechnology**, 2019, 30 304001

<https://iopscience.iop.org/article/10.1088/1361-6528/ab1760/meta>

52. Polarized cathodoluminescence for strain measurement, M. Fouchier, N. Rochat, E. Pargon, J. P. Landesman, **Rev. Sci. Instrum.** 90, 043701 (2019); doi: 10.1063/1.5078506

<https://aip.scitation.org/doi/abs/10.1063/1.5078506>

53. Growth and characterization of β -Ga₂O₃ thin films on different substrates, S. J. Hao, M. Hetzl, F. Schuster, K. Danielewicz, A. Bergmaier, G. Dollinger, Q. L. Sai, C. T. Xia, T. Hoffmann, M. Wiesinger, S. Matich, W. Aigner, and M. Stutzmann, **J. Appl. Phys.** 125, 105701 (2019)

<https://aip.scitation.org/doi/abs/10.1063/1.5061794>

54. Quantitative intrinsic auto-cathodoluminescence can resolve spectral signatures of tissue-isolated collagen extracellular matrix, M.S. Zielinski, E.Vardar, G. Vythilingam, E-M. Engelhardt, J. A. Hubbell, P. Frey, H. M. Larsson, **Nature Communications Biology** (2019) 2:69

<https://www.nature.com/articles/s42003-019-0313-x>

55. Investigation of GaN Nanowires Containing AlN/GaN Multiple Quantum Discs by EBIC and CL techniques, V. Piazza, A.V. Babichev, L. Mancini, M. Morassi, P. Quach, F. Bayle, L. Largeau, F. H. Julien, P. Rale, S. Collin, J-C. Harmand, N. Gogneau, M. Tchernycheva, **2019, Nanotechnology 30 214006**

<https://iopscience.iop.org/article/10.1088/1361-6528/ab055e/meta>

56. Tuning adatom mobility and nanoscale segregation by twin formation and polytypism, Luca Francaviglia, Gözde Tütüncüoğlu, Federico Matteini and Anna Fontcuberta i Morral, 2019 **Nanotechnology, 30, 054006**

<https://iopscience.iop.org/article/10.1088/1361-6528/aaefdd/meta>

2018

57. Dopant-induced modifications of $GaxIn(1-x)P$ nanowirebased p-n junctions monolithically integrated on Si (111), Nicolas Bologna, Stephan Wirths, Luca Francaviglia, Marco Campanini, Heinz Schmid, Vasileios Theofylaktopoulos, Kirsten E. Moselund, Anna Fontcuberta i Morral, Rolf Erni, Heike Riel, and Marta D. Rossell, **ACS Applied Materials & Interfaces, 2018 10 (38), 32588-32596**

<https://pubs.acs.org/doi/abs/10.1021/acsami.8b10770>

58. Second Harmonic Generation Hot-Spot on a Centrosymmetric Smooth Silver Surface, M. Galanty, O. Shavit, A. Weissman, H. Aharon, D. Gachet, E. Segal and A. Salomon, **Light: Science & Applications, volume 7, Article number: 49 (2018)**

<https://www.nature.com/articles/s41377-018-0053-6>

59. Microscopic View of Defect Evolution in Thermal Treated AlGaInAs Quantum Well Revealed by Spatially Resolved Cathodoluminescence, Song, L. Zhang, Y. Zeng, L. Qin, Y. Zhou, Y. Ning, and L. Wang, **Materials, 2018, 11, 1049**

<https://www.mdpi.com/1996-1944/11/6/1049>

60. Revealing the detailed path of sequential deposition for metal halide perovskite formation, A. Ummadisingu and M. Grätzel, **Sci. Adv.**, 2018; Vol.4, No.2

<https://advances.sciencemag.org/content/4/2/e1701402?intcmp=trendmd-adv>

61. Controlled compensation via non-equilibrium electrons in ZnO, Xiuhua Xie, Binghui Li, Zhenzhong Zhang, Shuangpeng Wang, Dezhen Shen, **Scientific reports**, (2018) 8:17020

<https://www.nature.com/articles/s41598-018-35178-w>

62. Cathodoluminescence hyperspectral analysis of whispering gallery modes in active semiconductor wedge resonators, P. Guillemé, J. Stervinou, T. Rohel, C. Cornet, D. Gachet, S. Balac, F. Mahé, Y. Dumeige, and Y. Léger, **Optics Letters**, 43 (8), (2018), 1766-1769.

<https://www.osapublishing.org/ol/abstract.cfm?uri=ol-43-8-1766>

63. Multifunctional molecular modulators for perovskite solar cells with over 20% efficiency and high operational stability, Dongqin Bi, Xiong Li, Jovana V. Milić, Dominik J. Kubicki, Norman Pellet, Jingshan Luo, Thomas LaGrange, Pierre Mettraux, Lyndon Emsley, Shaik M. Zakeeruddin, Michael Grätzel, **Nature Communications** (2018) 9:4482

<https://www.nature.com/articles/s41467-018-06709-w>

64. Cathodoluminescence-based nanoscopic thermometry in a lanthanide-doped phosphor, Clarice D. Aiello, Andrea D. Pickel, Edward Barnard, Rebecca B. Wai, Christian Monachon, Edward Wong, Shaul Aloni, D. Frank Ogletree, Chris Dames, Naomi Ginsberg, **arXiv:1810.07581v1** (2018)

<https://arxiv.org/abs/1810.07581>

65. Self-assembled hierarchical nanostructured perovskites enable highly efficient LEDs via an energy cascade, Xin Yu Chin, Ajay Perumal, Annalisa Bruno, Natalia Yantara, Sjoerd A. Veldhuis, Laura Martinez-Sarti, Bevita Chandran, Vladimir Chirvony, Alencious Shu-Zee Lo, Jinkyu So, Cesare Soci, Michael Grätzel, Henk J. Bolink, Nripan Mathews and Subodh G. Mhaisalkar, **Energy Environ. Sci.**, 2018, 11, 1770

<https://doi.org/10.1039/C8EE00293B>

66. Spatially dependent carrier dynamics in single InGaN/GaN core-shell microrod by time-resolved cathodoluminescence, W. Liu, C. Mounir, G. Rossbach, T. Schimpke, A. Avramescu, H.-J. Lugauer, M. Strassburg, U. Schwarz, B. Deveaud, G. Jacopin, **Applied Physics Letters**, **112**, (2018), 052106.

<https://aip.scitation.org/doi/10.1063/1.5009728>

67. Nanometre-scale optical property fluctuations in Cu₂ZnSnS₄ revealed by low temperature cathodoluminescence, B.G. Mendis, A.A. Taylor, M. Guennou, D.M. Berg, M. Arasimowicz, S. Ahmed, H. Deligianni, P.J. Dale, **Solar Energy Materials and Solar Cells** **174** (2018), 65-76.

<https://www.sciencedirect.com/science/article/abs/pii/S0927024817304658>

68. Hot carriers induced quenching of defects luminescence in Si doped AlN with Al core, Xiuhua Xie, Binghui Li, Zhenzhong Zhang, Dezhen Shen, **Journal of Luminescence**, **198**(2018), 178-182.

<https://www.sciencedirect.com/science/article/abs/pii/S0022231317309584>

69. Luminescence methodology to determine grain-boundary, grain-interior, and surface recombination in thin-film solar cells, John Moseley, Pierre Rale, Stéphane Collin, Eric Colegrove, Harvey Guthrey, Darius Kuciauskas, Helio Moutinho, Mowafak Al-Jassim, and Wyatt K. Metzger, **Journal of Applied Physics** **124**, 113104 (2018)

<https://aip.scitation.org/doi/abs/10.1063/1.5042532>

2017

70. Determination of n-Type Doping Level in Single GaAs Nanowires by Cathodoluminescence, Hung-Ling Cheng, Chalermchai Himwas, Andreas Scaccabarozzi, Pierre Rale, Fabrice Oehler, Aristide Lemaître, Laurent Lombez, Jean-François Guillemoles, Maria Tchernycheva, Jean-Christophe Harmand, Andrea Cattoni, and Stéphane Collin, **Nano Letters**, **17**(11), pp. 6667-6675 (2017)

<https://pubs.acs.org/doi/abs/10.1021/acs.nanolett.7b02620>

71. Interface dipole and band bending in the hybrid p-n heterojunction MoS₂/GaN(0001), Hugo Henck, Zeineb Ben Aziza, Olivia Zill, Debora Pierucci, Carl N. Naylor, Mathieu G. Silly, Noelle Gogneau, Fabrice Oehler, Stéphane Collin, Julien Brault, Fausto Sirotti, François Bertran, Partrick Le Fèvre, Stéphane Berciaud, A. T. Charlie Johnson, Emmanuel Lhuillier, Julien E. Rault, and Abdelkarim Ouerghi, **Physical Review**, **96**, 115312 (2017)

<https://journals.aps.org/prb/abstract/10.1103/PhysRevB.96.115312>

- 72. Low energy cathodoluminescence analysis of damage build-up in ion irradiated spinel mono- and polycrystals**, Iwona Jozwik, Marcin S. Zielinski, Alexander Azarov, Renata Ratajczak, Cyprian Mieszczynski, Anna Stonert, Jacek Jagielski, **Nuclear Inst. And Methods in Physics Research B (2017)**

<https://www.sciencedirect.com/science/article/abs/pii/S0168583X17309497>

- 73. Giant enhancement of cathodoluminescence of monolayer transitional metal dichalcogenides semiconductors**, Shoujun Zheng, Jinkyu So, Fucai Liu, Nikolay I. Zheludev, and Hong Jin Fan, **Nano Letters (2017)**

<https://pubs.acs.org/doi/abs/10.1021/acs.nanolett.7b03585>

- 74. Dislocations in AlGaIn: core structure, atom segregation and optical properties**, Fabien C.-P. Massabuau, Sneha L. Rhode, Matthew K. Horton, Thomas J. O'Hanlon, Andras Kovacs, Marcin S. Zielinski, Menno J. Kappers, Rafal E. Dunin-Borokowski, Colin J. Humphreys, and Rachel A. Oliver, **Nano Letters**, DOI: 10.1021/acs.nanolett.7b01697 (2017).

<https://pubs.acs.org/doi/abs/10.1021/acs.nanolett.7b01697>

- 75. Direct Fabrication of Three-dimensional Metallic Networks and their Performance**, R. Ron, K. Rechav, D. Gachet, and A. Salomon, **Advanced Materials**, 29, 1604018 (2017)

<https://onlinelibrary.wiley.com/doi/abs/10.1002/adma.201604018>

2016

- 76. Local carrier recombination and associated dynamics in m-plane InGaIn/GaN quantum wells probed by picosecond cathodoluminescence**, T. Zhu, D. Gachet, F. Tang, W. Y. Fu, F. Oehler, M. J. Kappers, P. Dawson, C. J. Humphreys & R. A. Oliver, **Applied Physics Letters**, **109**, 232103 (2016).

<https://aip.scitation.org/doi/abs/10.1063/1.4971366>

- 77. Strain-Induced Band Gap Engineering in Selectively Grown GaN–(Al,Ga)N Core–Shell Nanowire Heterostructures**, M. Hetzl, M. Kraut, J. Winnerl, L. Francaviglia, M. Döblinger, S. Matich, A. Fontcuberta i Morral, and M. Stutzmann, *Nano Letters*, **16**, 7098–7106 (2016)
<https://pubs.acs.org/doi/abs/10.1021/acs.nanolett.6b03354>
- 78. Spatially correlated structural and optical characterization of a single InGaAs quantum well fin selectively grown on Si by microscopy and cathodoluminescence techniques**, S. David, J. Roque, N. Rochat, N. Bernier, L. Piot, R. Alcotte, T. Cerba, M. Martin, J. Moeyaert, Y. Bogumilowicz, S. Arnaud, F. Bertin, F. Bassani, and T. Baron, *APL Materials* **4**, 056102 (2016).
<https://aip.scitation.org/doi/full/10.1063/1.4949761>
- 79. Hybridization between nano cavities for polarimetric color sorter at the sub-micron scale**, E. Segal, A. Weissman, D. Gachet, and A. Salomon, *Nanoscale*, **8**, 15296–15302 (2016).
<https://doi.org/10.1039/C6NR03528K>
- 80. Exciton dynamics at a single dislocation in GaN probed by picosecond time-resolved cathodoluminescence**, W. Liu, J.-F. Carlin, N. Grandjean, B. Deveaud, and G. Jacopin, *Applied Physics Letters*, **109**, 042101 (2016).
<https://aip.scitation.org/doi/full/10.1063/1.4959832>
- 81. Asymmetric cathodoluminescence emission in CH₃NH₃PbI_{3-x}Br_x Perovskite Single Crystals**, M. I. Dar, G. Jacopin, M. Hezam, N. Arora, S. M. Zakeeruddin, B. Deveaud, M. K. Nazeeruddin, and M. Grätzel, *ACS Photonics*, **3**, 947–952 (2016).
<https://pubs.acs.org/doi/abs/10.1021/acsp Photonics.6b00290>
- 82. Nanoscale Investigation of Degradation and Wavelength Fluctuations in InGaN-based Green Laser Diodes**, C. De Santi, M. Meneghini, D. Gachet, G. Mura, M. Vanzi, G. Meneghesso, and E. Zanoni, *IEEE Transactions on Nanotechnologies*, **15**, 274 (2016).
<https://ieeexplore.ieee.org/abstract/document/7390075>
- 83. Excitonic Diffusion in InGaN/GaN Core–Shell Nanowires**, M. Shahmohammadi, J.-D. Ganière, H. Zhang, R. Ciechonski, G. Vescovi, O. Kryliouk, M. Tchernycheva, and G. Jacopin, *Nano Letters*, **16**, 243 (2016).

<https://pubs.acs.org/doi/abs/10.1021/acs.nanolett.5b03611>

2015

84. Synthesis of large-area multilayer hexagonal boron nitride for high material performance, Soo Min Kim, Allen Hsu, Min Ho Park, Sang Hoon Chae, Seok Joon Yun, Joo Song Lee, Dae-Hyun Cho, Wenjing Fang, Changgu Lee, Tomás Palacios, Mildred Dresselhaus, Ki Kang Kim, Young Hee Lee & Jing Kong, *Nature Communications*, volume 6, Article number: 8662 (2015)

<https://www.nature.com/articles/ncomms9662>

85. Nonstoichiometric Low-Temperature Grown GaAs Nanowires, A. Díaz Álvarez, T. Xu, G. Tütüncüoğlu, T. Demonchaux, J.-P. Nys, M. Berthe, F. Matteini, H. A. Potts, D. Troadec, G. Patriarche, J.-F. Lampin, C. Coinon, A. Fontcuberta i Morral, R. E. Dunin-Borkowski, P. Ebert, and B. Grandidier, *Nano Letters*, 15, 6440 (2015).

<https://pubs.acs.org/doi/abs/10.1021/acs.nanolett.5b01802>

86. Towards defect-free 1-D GaAs/AlGaAs heterostructures based on GaAs nanomembranes, G. Tütüncüoğlu, M. de la Mata, D. Deiana, H. Potts, F. Matteini, J. Arbiol, and A. Fontcuberta i Morral, *Nanoscale*, 7, 19453 (2015).

<https://doi.org/10.1039/C5NR04821D>

87. Long lifetime hole traps at grain boundaries in CdTe thin-film photovoltaics, B. G. Mendis, D. Gachet, J. D. Major, and K. Durose, *Physical Review Letters*, 115, 218701 (2015).

<https://journals.aps.org/prl/abstract/10.1103/PhysRevLett.115.218701>

88. Exciton hopping probed by picosecond time-resolved cathodoluminescence, M. Shahmohammadi, G. Jacopin, X. Fu, J.-D. Ganière, D. Yu, and B. Deveaud, *Applied Physics Letters*, 107, 141101 (2015).

<https://aip.scitation.org/doi/full/10.1063/1.4932098>

89. A comparative study of microstructural stability and sulfur diffusion in CdS/CdTe photovoltaic devices, A. A. Taylor, J. D. Major, G. Kartopu, D. Lamb, J. Duenow, R. G. Dhere, X. Maeder, S. J. C. Irvine, K. Durose, and B. G. Mendis, *Solar Energy Materials and Solar Cells*, 141, 341–349 (2015).

<https://www.sciencedirect.com/science/article/abs/pii/S0927024815002792>

90. **Facile route to freestanding CH₃NH₃PbI₃ crystals using inverse solubility**, J. M. Kadro, K. Nonomura, D. Gachet, M. Grätzel & A. Hagfeldt, **Scientific Reports**, **5**, 11654 (2015).

<https://www.nature.com/articles/srep11654?origin=ppub>

91. **Effect of Threading Dislocations on the Quality Factor of InGaN/GaN Microdisk Cavities**, T. J. Puchtler, A. Woolf, T. Zhu, D. Gachet, E. L. Hu, and R. A. Oliver, **ACS Photonics**, **2**, 137–143 (2015).

<https://pubs.acs.org/doi/abs/10.1021/ph500426g>

92. **Co-existence of a few and sub-micron inhomogeneities in Al-rich AlGa_N/AlN quantum wells**, Y. Iwata, T. Oto, D. Gachet, R. G. Banal, M. Funato, and Y. Kawakami, **Journal of Applied Physics**, **117**, 115702 (2015).

<https://aip.scitation.org/doi/abs/10.1063/1.4915533>

2014

93. **Nanowires of lead-methylamine iodide (CH₃NH₃PbI₃) prepared by low temperature solution-mediated crystallization**, E. Horváth, M. Spina, Z. Szekrényes, K. Kamarás, R. Gaal, D. Gachet, and L. Forró, **Nano Letters**, **14**, 6761–6766 (2014).

<https://pubs.acs.org/doi/abs/10.1021/nl5020684>

94. **Precision Synthesis: Designing Hot Spots over Hot Spots via Selective Gold Deposition on Silver Octahedra Edges**, Y. Liu, S. Pedireddy, Y. H. Lee, R. S. Hegde, W. W. Tjiu, Y. Cui and X. Y. Ling, **Small**, **10**, 4940–4950 (2014).

<https://onlinelibrary.wiley.com/doi/abs/10.1002/sml.201401242>

95. **Exciton footprint of self-assembled AlGaAs quantum dots in core-shell nanowires**, Y. Fontana, P. Corfdir, B. Van Hattem, E. Russo-Averchi, M. Heiss, S. Sonderegger, C. Magen, J. Arbiol, R. T. Phillips, and A. Fontcuberta i Morral, **Physical Review B**, **90**, 075307 (2014).

<https://journals.aps.org/prb/abstract/10.1103/PhysRevB.90.075307>

96. Low defect InGaAs quantum well selectively grown by metal organic chemical vapor deposition on Si(100) 300mm wafers for next generation non planar devices, R. Cipro, T. Baron, M. Martin, J. Moeyaert, S. David, V. Gorbenko, F. Bassani, Y. Bogumilowicz, J. P. Barnes, N. Rochat, V. Loup, C. Vizioz, N. Allouti, N. Chauvin, X. Y. Bao, Z. Ye, J. B. Pin, and E. Sanchez, **Applied Physics Letters**, **104**, 262103 (2014).

<https://aip.scitation.org/doi/abs/10.1063/1.4886404>

97. Exciton Drift in Semiconductors under Uniform Strain Gradients: Application to Bent ZnO Microwires, X. Fu, G. Jacopin, M. Shahmohammadi, R. Liu, M. Benameur, J.-D. Ganière, J. Feng, W. Guo, Z.-M. Liao, B. Deveaud, and D. Yu, **ACS Nano**, **8**, 3412–3420 (2014).

<https://pubs.acs.org/doi/abs/10.1021/nn4062353>

2013

98. Bimetallic Platonic Janus Nanocrystals, Q. Zhang, Y. H. Lee, I. Y. Phang, S. Pedireddy, W. W. Tjiu, and X. Y. Ling, **Langmuir**, **29**, 12844–12851 (2013).

<https://pubs.acs.org/doi/abs/10.1021/la403067h>

99. Vertically Aligned Gold Nanorod Monolayer on Arbitrary Substrates: Self-Assembly and Femtomolar Detection of Food Contaminants, B. Peng, G. Li, D. Li, S. Dodson, Q. Zhang, J. Zhang, Y. H. Lee, H. V. Demir, X. Y. Ling, and Q. Xiong, **ACS Nano**, **7**, 5993–6000 (2013).

<https://pubs.acs.org/doi/abs/10.1021/nn401685p>

100. Implementation of Spatio-Time-Resolved CL Spectroscopy for Studying Local Carrier Dynamics in a Low Dislocation Density m-Plane InGaN Epilayer Grown on a Freestanding GaN Substrate, M. Kagaya, P. Corfdir, J.-D. Ganière, B. Deveaud-Plédran, N. Grandjean, and S. F. Chichibu, **Japanese Journal of Applied Physics**, **50**, 111002 (2011).

<https://iopscience.iop.org/article/10.1143/JJAP.50.111002/meta>

2011

101. Time-resolved cathodoluminescence on polychromatic light emitting (In,Ga)N quantum wells grown on (11-22) GaN facets, P. Corfdir, D. Simeonov, E. Feltin, J.-F. Carlin, P. Lefebvre, N. Grandjean, B. Deveaud-Plédran, and J.-D. Ganière, **Physica Status Solidi C**, **8**, 1394–1397 (2011).

<https://onlinelibrary.wiley.com/doi/abs/10.1002/pssc.201084005>

- 102. Picosecond Time-Resolved Cathodoluminescence to Probe Exciton Dynamics in a-plane (Al,Ga)N/GaN Quantum Wells**, P. Corfdir, P. Lefebvre, A. Dussaigne, L. Balet, S. Sonderegger, T. Zhu, D. Martin, J.-D. Ganière, N. Grandjean, and B. Deveaud-Pledran, **Microsc. Microanal.** **17** (Suppl 2), 20111869.

<https://aip.scitation.org/doi/abs/10.1063/1.3305336>

- 103. Biexciton emission and crystalline quality of ZnO nano-objects**, P. Corfdir, M. Abid, A. Mouti, P. A. Stadelmann, E. Papa, J.-P. Ansermet, J.-D. Ganière, and B. Deveaud-Plédran, **Nanotechnology**, **22**, 285710 (2011).

<https://iopscience.iop.org/article/10.1088/0957-4484/22/28/285710/meta>

2010

- 104. Exciton recombination dynamics in a-plane (Al,Ga)N/GaN quantum wells probed by picosecond photo and cathodoluminescence**, P. Corfdir, P. Lefebvre, L. Balet, S. Sonderegger, A. Dussaigne, T. Zhu, D. Martin, J.-D. Ganière, N. Grandjean, and B. Deveaud-Plédran, **Journal of Applied Physics**, **107**, 043524 (2010).

<https://aip.scitation.org/doi/abs/10.1063/1.3305336>

2009

- 105. 102.Low-temperature time-resolved cathodoluminescence study of exciton dynamics involving basal stacking faults in a-plane GaN**, P. Corfdir, J. Ristić, P. Lefebvre, T. Zhu, D. Martin, A. Dussaigne, J. D. Ganière, N. Grandjean, and B. Deveaud-Plédran, **Applied Physics Letters**, **94**, 201115 (2009).

<https://hal.archives-ouvertes.fr/hal-00391736/>