

Jeffery Aguiar

List of Publications by Year in descending order

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Version: 2024-02-01

74
papers

1,953
citations

257450

24
h-index

254184

43
g-index

77
all docs

77
docs citations

77
times ranked

3712
citing authors

| # | ARTICLE | IF | CITATIONS |
|----|---|------|-----------|
| 1 | CdTe solar cells with open-circuit voltage breaking the 1%V barrier. Nature Energy, 2016, 1, . | 39.5 | 307 |
| 2 | A graded catalyticâ€“protective layer for an efficient and stable water-splitting photocathode. Nature Energy, 2017, 2, . | 39.5 | 135 |
| 3 | Atomic-Scale Imaging and Spectroscopy for <i>In Situ</i> Liquid Scanning Transmission Electron Microscopy. Microscopy and Microanalysis, 2012, 18, 621-627. | 0.4 | 125 |
| 4 | Decoding crystallography from high-resolution electron imaging and diffraction datasets with deep learning. Science Advances, 2019, 5, eaaw1949. | 10.3 | 81 |
| 5 | Oxidatively Stable Nanoporous Silicon Photocathodes with Enhanced Onset Voltage for Photoelectrochemical Proton Reduction. Nano Letters, 2015, 15, 2517-2525. | 9.1 | 80 |
| 6 | In situ investigation of the formation and metastability of formamidinium lead tri-iodide perovskite solar cells. Energy and Environmental Science, 2016, 9, 2372-2382. | 30.8 | 79 |
| 7 | Interfacial Ferromagnetism in LaNiO_3 . Physical Review Letters, 2013, 111, 087202. | 0.8 | 75 |
| 8 | Black carbon concentrations and diesel vehicle emission factors derived from coefficient of haze measurements in California: 1967â€“2003. Atmospheric Environment, 2008, 42, 480-491. | 4.1 | 64 |
| 9 | Effect of helium irradiation on Ti3AlC2 at 500Â°C. Scripta Materialia, 2014, 77, 1-4. | 5.2 | 51 |
| 10 | Thermal Expansion, Heat Capacity, and Thermal Conductivity of Nickel Ferrite (NiFe_2O_4). Journal of the American Ceramic Society, 2014, 97, 1559-1565. | 3.8 | 51 |
| 11 | Sodium Accumulation at Potential-Induced Degradation Shunted Areas in Polycrystalline Silicon Modules. IEEE Journal of Photovoltaics, 2016, 6, 1440-1445. | 2.5 | 48 |
| 12 | Unbiased solar H_2 production with current density up to 23 mA cm^{-2} by Swiss-cheese black Si coupled with wastewater bioanode. Energy and Environmental Science, 2019, 12, 1088-1099. | 30.8 | 48 |
| 13 | Termination chemistry-driven dislocation structure at SrTiO3/MgO heterointerfaces. Nature Communications, 2014, 5, 5043. | 12.8 | 39 |
| 14 | Bubble formation and lattice parameter changes resulting from He irradiation of defect-fluorite Gd2Zr2O7. Acta Materialia, 2016, 115, 115-122. | 7.9 | 39 |
| 15 | Thermodynamics versus kinetics of grain growth control in nanocrystalline zirconia. Acta Materialia, 2017, 136, 224-234. | 7.9 | 38 |
| 16 | Low-cost plasma immersion ion implantation doping for Interdigitated back passivated contact (IBPC) solar cells. Solar Energy Materials and Solar Cells, 2016, 158, 68-76. | 6.2 | 37 |
| 17 | SANS and TEM of ferriticâ€“martensitic steel T91 irradiated in FFTF up to 184dpa at 413Â°C. Journal of Nuclear Materials, 2013, 440, 91-97. | 2.7 | 36 |
| 18 | Interface Energies of Nanocrystalline Doped Ceria: Effects of Manganese Segregation. Journal of Physical Chemistry C, 2015, 119, 27855-27864. | 3.1 | 36 |

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|----|---|------|-----------|
| 19 | Electrophobic interaction induced impurity clustering in metals. <i>Acta Materialia</i> , 2016, 119, 1-8. | 7.9 | 36 |
| 20 | Structure and segregation of dopant-defect complexes at grain boundaries in nanocrystalline doped ceria. <i>Physical Chemistry Chemical Physics</i> , 2015, 17, 15375-15385. | 2.8 | 33 |
| 21 | Localized corrosion of low-carbon steel at the nanoscale. <i>Npj Materials Degradation</i> , 2019, 3, . | 5.8 | 31 |
| 22 | Effect of Water Vapor, Temperature, and Rapid Annealing on Formamidinium Lead Triiodide Perovskite Crystallization. <i>ACS Energy Letters</i> , 2016, 1, 155-161. | 17.4 | 27 |
| 23 | Crystallographic prediction from diffraction and chemistry data for higher throughput classification using machine learning. <i>Computational Materials Science</i> , 2020, 173, 109409. | 3.0 | 27 |
| 24 | Linking Interfacial Step Structure and Chemistry with Locally Enhanced Radiation-Induced Amorphization at Oxide Heterointerfaces. <i>Advanced Materials Interfaces</i> , 2014, 1, 1300142. | 3.7 | 25 |
| 25 | Probing battery chemistry with liquid cell electron energy loss spectroscopy. <i>Chemical Communications</i> , 2015, 51, 16377-16380. | 4.1 | 25 |
| 26 | Revealing Surface Modifications of Potassium-Fluoride-Treated Cu(In,Ga)Se ₂ : A Study of Material Structure, Chemistry, and Photovoltaic Performance. <i>Advanced Materials Interfaces</i> , 2016, 3, 1600013. | 3.7 | 24 |
| 27 | Solar wind contributions to Earth's oceans. <i>Nature Astronomy</i> , 2021, 5, 1275-1285. | 10.1 | 22 |
| 28 | Defect interactions with stepped CeO ₂ /SrTiO ₃ interfaces: Implications for radiation damage evolution and fast ion conduction. <i>Journal of Chemical Physics</i> , 2014, 140, 194701. | 3.0 | 21 |
| 29 | Non-uniform Solute Segregation at Semi-Coherent Metal/Oxide Interfaces. <i>Scientific Reports</i> , 2015, 5, 13086. | 3.3 | 21 |
| 30 | Bringing nuclear materials discovery and qualification into the 21st century. <i>Nature Communications</i> , 2020, 11, 2556. | 12.8 | 18 |
| 31 | Combined effects of radiation damage and He accumulation on bubble nucleation in Gd ₂ Ti ₂ O ₇ . <i>Journal of Nuclear Materials</i> , 2016, 479, 542-547. | 2.7 | 16 |
| 32 | Revealing the semiconductor-catalyst interface in buried platinum black silicon photocathodes. <i>Journal of Materials Chemistry A</i> , 2016, 4, 8123-8129. | 10.3 | 15 |
| 33 | Orientation-specific amorphization and intercalated recrystallization at ion-irradiated SrTiO ₃ /MgO interfaces. <i>Journal of Materials Research</i> , 2014, 29, 1699-1710. | 2.6 | 14 |
| 34 | Mapping strain modulated electronic structure perturbations in mixed phase bismuth ferrite thin films. <i>Journal of Materials Chemistry C</i> , 2015, 3, 1835-1845. | 5.5 | 14 |
| 35 | Quantifying the low-energy limit and spectral resolution in valence electron energy loss spectroscopy. <i>Ultramicroscopy</i> , 2013, 124, 130-138. | 1.9 | 13 |
| 36 | Contrasting the Material Chemistry of Cu ₂ ZnSnSe ₄ and Cu ₂ ZnSnS ₄ (4x)Se _x . <i>Advanced Science</i> , 2016, 3, 1500320. | 11.2 | 13 |

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|----|---|------|-----------|
| 37 | Dual Protection Layer Strategy to Increase Photoelectrodeâ€“Catalyst Interfacial Stability: A Case Study on Black Silicon Photoelectrodes. <i>Advanced Materials Interfaces</i> , 2019, 6, 1802085. | 3.7 | 13 |
| 38 | Advances in the electron diffraction characterization of atomic clusters and nanoparticles. <i>Nanoscale Advances</i> , 2021, 3, 311-325. | 4.6 | 13 |
| 39 | Hidden one-dimensional spin modulation in a three-dimensional metal. <i>Nature Communications</i> , 2014, 5, 4218. | 12.8 | 12 |
| 40 | Studying Perovskite-based Solar Cells with Correlative In-Situ Microscopy. <i>Microscopy and Microanalysis</i> , 2015, 21, 969-970. | 0.4 | 11 |
| 41 | Cation ratio fluctuations in Cu ₂ ZnSnS ₄ at the 20â€“nm length scale investigated by analytical electron microscopy. <i>Physica Status Solidi (A) Applications and Materials Science</i> , 2016, 213, 2392-2399. | 1.8 | 11 |
| 42 | Role of the interface on radiation damage in the SrTiO ₃ /LaAlO ₃ heterostructure under Ne ²⁺ ion irradiation. <i>Journal of Applied Physics</i> , 2014, 115, . | 2.5 | 10 |
| 43 | Interface Characterization of Single-Crystal CdTe Solar Cells With VOC > 950 mV. <i>IEEE Journal of Photovoltaics</i> , 2016, 6, 1650-1653. | 2.5 | 10 |
| 44 | Solute redistribution and phase stability at FeCr/TiO ₂ interfaces under ion irradiation. <i>Acta Materialia</i> , 2015, 89, 364-373. | 7.9 | 9 |
| 45 | Irradiation-induced formation of a spinel phase at the FeCr/MgO interface. <i>Acta Materialia</i> , 2015, 93, 87-94. | 7.9 | 8 |
| 46 | A Strategy to Mitigate Grain Boundary Blocking in Nanocrystalline Zirconia. <i>Journal of Physical Chemistry C</i> , 2018, 122, 26344-26352. | 3.1 | 8 |
| 47 | Module degradation mechanisms studied by a multi-scale approach. , 2016, , . | | 7 |
| 48 | In situ investigation of halide incorporation into perovskite solar cells. <i>MRS Communications</i> , 2017, 7, 575-582. | 1.8 | 7 |
| 49 | Waterâ€“Assisted Liftoff of Polycrystalline CdS/CdTe Thin Films Using Heterogeneous Interfacial Engineering. <i>Advanced Materials Interfaces</i> , 2019, 6, 1900300. | 3.7 | 7 |
| 50 | Integrating atomistic simulations and machine learning to design multi-principal element alloys with superior elastic modulus. <i>Journal of Materials Research</i> , 2022, 37, 1497-1512. | 2.6 | 7 |
| 51 | Cr incorporated phase transformation in Y ₂ O ₃ under ion irradiation. <i>Scientific Reports</i> , 2017, 7, 40148. | 3.3 | 6 |
| 52 | Cadmium Selective Etching in CdTe Solar Cells Produces Detrimental Narrow-Gap Te in Grain Boundaries. <i>ACS Applied Energy Materials</i> , 2020, 3, 1749-1758. | 5.1 | 6 |
| 53 | Electronic structure of oxide fuels from experiment and first principles calculations. <i>Journal of Physics: Conference Series</i> , 2010, 241, 012062. | 0.4 | 5 |
| 54 | Observation and Implications of Composition Inhomogeneity Along Grain Boundaries in Thin Film Polycrystalline CdTe Photovoltaic Devices. <i>Advanced Materials Interfaces</i> , 2019, 6, 1900152. | 3.7 | 5 |

| # | ARTICLE | IF | CITATIONS |
|----|---|------|-----------|
| 55 | Structure-Induced Stability in Sinuous Black Silicon for Enhanced Hydrogen Evolution Reaction Performance. <i>Advanced Functional Materials</i> , 2021, 31, 2008888. | 14.9 | 5 |
| 56 | Characterization of secondary phases and other defects in CdZnTe. , 2010, , . | | 4 |
| 57 | Nanoscale morphologies at alloyed and irradiated metal-oxide bilayers. <i>Journal of Materials Science</i> , 2015, 50, 2726-2734. | 3.7 | 4 |
| 58 | Atomic scale understanding of poly-Si/SiO ₂ /c-Si passivated contacts: Passivation degradation due to metallization. , 2016, , . | | 3 |
| 59 | Structure and radiation response of anion excess bixbyite Gd ₂ Ce ₂ O ₇ . <i>Physical Review Materials</i> , 2022, 6, . | 2.4 | 3 |
| 60 | Investigating the electronic structure of fluorite-structured oxide compounds: comparison of experimental EELS with first principles calculations. <i>Journal of Physics Condensed Matter</i> , 2012, 24, 295503. | 1.8 | 2 |
| 61 | Structural analysis of Gd ₂ Ce ₂ O ₇ . <i>Materials Research Society Symposia Proceedings</i> , 2015, 1743, 7. | 0.1 | 2 |
| 62 | Densification of graphite under high pressure and moderate temperature. <i>Materials Today Communications</i> , 2020, 22, 100821. | 1.9 | 2 |
| 63 | Plasma immersion ion implantation for interdigitated back passivated contact (IBPC) solar cells. , 2016, , . | | 1 |
| 64 | Mapping carrier lifetime variations in polycrystalline CdTe thin films using confocal microscopy. , 2018, , . | | 1 |
| 65 | In-situ Ion Irradiation and Recrystallization in Highly Structured Materials. <i>Microscopy and Microanalysis</i> , 2019, 25, 1572-1573. | 0.4 | 1 |
| 66 | Structural and Compositional Properties of Recrystallized CdS/CdTe Thin-Films Grown on Oxidized Silicon Substrates. <i>Microscopy and Microanalysis</i> , 2019, 25, 2166-2167. | 0.4 | 1 |
| 67 | Assessing the solid-state kinetics and behavior for uranium-free Pu-12Am-40Zr alloys at 973 K. <i>Journal of Alloys and Compounds</i> , 2020, 817, 152735. | 5.5 | 1 |
| 68 | High Throughput Crystal Structure Classification. <i>Microscopy and Microanalysis</i> , 2020, 26, 10-12. | 0.4 | 1 |
| 69 | Studying the Electronic Structure of Uranium Dioxide. <i>Microscopy and Microanalysis</i> , 2009, 15, 1380-1381. | 0.4 | 0 |
| 70 | Determining the Atomic Structure of [111] Tilt Grain Boundaries in Ceria. <i>Microscopy and Microanalysis</i> , 2012, 18, 386-387. | 0.4 | 0 |
| 71 | Tracking the Evolution of in-situ Radiochemistry with Transmission Electron Microscopy. <i>Microscopy and Microanalysis</i> , 2015, 21, 1747-1748. | 0.4 | 0 |
| 72 | Pioneering the Use of Neural Network Architectures and Feature Engineering for Real-Time Augmented Microscopy and Analysis. <i>Microscopy and Microanalysis</i> , 2018, 24, 514-515. | 0.4 | 0 |

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|----|---|-----|-----------|
| 73 | Freestanding Thinâ€Films: Waterâ€Assisted Liftoff of Polycrystalline CdS/CdTe Thin Films Using Heterogeneous Interfacial Engineering (Adv. Mater. Interfaces 14/2019). Advanced Materials Interfaces, 2019, 6, 1970095. | 3.7 | 0 |
| 74 | Merging Deep Learning, Chemistry, and Diffraction for High-Throughput Material Structure Prediction. Microscopy and Microanalysis, 2019, 25, 168-169. | 0.4 | 0 |