

It is shown that the dominant effect of electrostatic potential fluctuations in Cu(In,Ga)Se_2 solar cells is linked to the local variations in the doping densities N_D and the interface-charge density N_{IF} introduced via the buffer layer deposition or duration of RbF postdeposition treatment. Furthermore, light soaking was found to reduce



Alkali atoms reduce the band tails in Cu(In,Ga)Se_2 solar cells on a 20% efficiency level and beyond. A reduction of the Urbach energy E_U , which describes the band tails, leads to an increase of the open-circuit voltage V_{OC} in Cu(In,Ga)Se_2 as well as in other solar cell technologies. Our theoretical model shows that the increase in the V_{OC} cannot be explained ???



Progress in Photovoltaics: Research and Applications is a leading journal in the field of solar energy, focused on research that reports substantial progress in efficiency, energy yield and reliability of solar cells. It aims to reach all interested professionals, researchers, and energy policy-makers. We publish original research and timely information about alternative energy ???

PROGRESS IN PHOTOVOLTAICS SHORT COMMUNICATION



Progress in Photovoltaics: Research and Applications Volume 32, Issue 1 p. 3-13. SHORT COMMUNICATION. Open Access. Solar cell efficiency tables (Version 63) Martin A. Green, Corresponding Author. Martin ???



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Progress in Photovoltaics: Research and Applications. Volume 15, Issue 5 p. 425-430. SHORT COMMUNICATION: Research. Solar cell efficiency tables (version 30) Martin A. Green, Corresponding Author. Department of Solar Cells ??? Materials and Technology, Heidenhofstr. 2 D-79110 Freiburg, Germany.

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SHORT COMMUNICATION. Open Access. Solar cell efficiency tables (Version 61) Consolidated tables showing an extensive listing of the highest independently confirmed efficiencies for solar cells and modules are presented. Graphs showing progress with each cell technology over the 30-year history of the tables are also included plus an



Consolidated tables showing an extensive listing of the highest independently confirmed efficiencies for solar cells and modules are presented. Guidelines for inclusion of results into ???



Progress in Photovoltaics: Research and Applications. Volume 18, Issue 2 p. 144-150. Research: Short Communication. Free Access. Solar cell efficiency tables (version 35) Martin A. Green, Corresponding Author. Department of Solar Cells???Materials and Technology, Heidenhofstr. 2, D-79110 Freiburg, Germany.

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Progress in Photovoltaics: Research and Applications Volume 31, Issue 7 p. 651-663.
SHORT COMMUNICATION. Open Access. Solar cell efficiency tables (version 62) Martin A. Green, Corresponding Author. Martin A. Green
Consolidated tables showing an extensive listing of the highest independently confirmed efficiencies for solar cells and



Progress in Photovoltaics: Research and Applications. Volume 30, Issue 7 p. 687-701.
SHORT COMMUNICATION. Open Access. Solar cell efficiency tables (Version 60) Martin A. Green, Corresponding Author. Martin A. Green An appendix describing temporary electrical contacting of large-area solar cells approaches and terminology is also included.

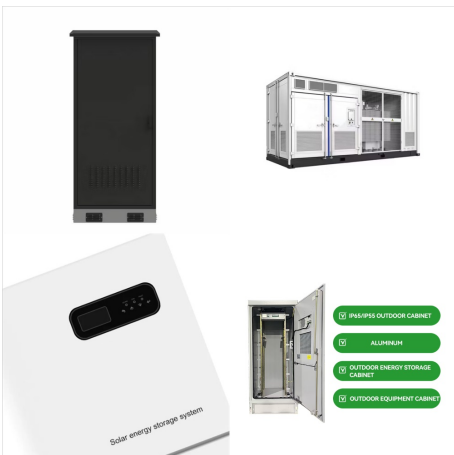


Progress in Photovoltaics: Research and Applications. Volume 28, Issue 7 p. 629-638.
Consolidated tables showing an extensive listing of the highest independently confirmed efficiencies for solar cells and modules are presented. Guidelines for inclusion of results into these tables are outlined, and new entries since January 2020 are

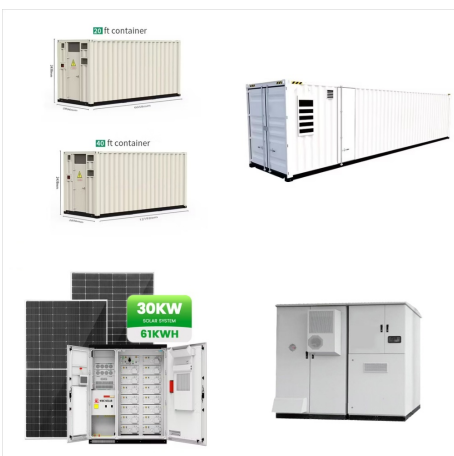
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Abstract Silicon solar cells with passivated rear side and laser-fired contacts were produced on float zone material. The front side contacts are built up in two steps, seed and plate. Progress in Photovoltaics: Research and Applications. Volume 16, Issue 7 p. 555-560. Short Communication: ACCELERATED PUBLICATION: Research: Accelerated



Progress in Photovoltaics: Research and Applications Issue 5 p. 447-455. SHORT COMMUNICATION: Broader Perspectives. Free Access. Silicon photovoltaic modules: a brief history of the first 50 years Centre of Excellence for Advanced Silicon Photovoltaics and Photonics, University of New South Wales, Sydney, 2052



SHORT COMMUNICATION. Open Access. Solar cell efficiency tables (Version 63) Martin A. Green, Corresponding Author. "Progress in Photovoltaics" has published six monthly listings of the highest confirmed ???



We report a new state of the art in thin-film polycrystalline Cu(In,Ga)Se 2-based solar cells with the attainment of energy conversion efficiencies of 19.5%. An analysis of the performance of Cu(In,Ga)Se 2 solar cells in terms of some absorber properties and other derived diode parameters is presented. The analysis reveals that the highest-performance cells can be ???



Progress in Photovoltaics: Research and Applications. Volume 19, Issue 1 p. 84-92. Research: Short Communication: Accelerated Publication. Free Access. Solar cell efficiency tables (version 37) Martin A. Green, Corresponding Author. Department of Solar Cells???Materials and Technology, Fraunhofer Institute for Solar Energy Systems



SHORT COMMUNICATION. Open Access. Solar cell efficiency tables (version 62) Martin A. Green, Corresponding Author. "Progress in Photovoltaics" has published six monthly listings of the highest confirmed efficiencies for a range of photovoltaic cell and module technologies. 1-3 By providing guidelines for the inclusion of results into

PROGRESS IN PHOTOVOLTAICS SHORT COMMUNICATION



Progress in Photovoltaics: Research and Applications. Volume 12, Issue 7 p. 553-558. Research. SHORT COMMUNICATION: ACCELERATED PUBLICATION: Multicrystalline silicon solar cells exceeding 20% efficiency. O. Schultz, Corresponding Author. O. Schultz. Too Short Weak Medium Strong Very Strong Too Long. Password Changed Successfully.



Solar cell researchers at NREL and elsewhere are also pursuing many new photovoltaic technologies???such as solar cells made from organic materials, quantum dots, and hybrid organic-inorganic materials (also known as perovskites). These next-generation technologies may offer lower costs, greater ease of manufacture, or other benefits.



Progress in Photovoltaics: Research and Applications. Volume 21, Issue 1 p. 72-76. Short Communication. Thin film solar cell with 8.4% power conversion efficiency using an earth-abundant Cu₂ZnSnS₄ absorber. Using vacuum process, we fabricated Cu₂ZnSnS₄ solar cells with 8.4% efficiency,

PROGRESS IN PHOTOVOLTAICS SHORT COMMUNICATION



Progress in Photovoltaics: Research and Applications Volume 32, Issue 1 p. 3-13. SHORT COMMUNICATION. Open Access. Solar cell efficiency tables (Version 63) Martin A. Green, Corresponding Author. Martin A. Green Consolidated tables showing an extensive listing of the highest independently confirmed efficiencies for solar cells and



We report a new record total-area efficiency of 19.79% for CuInGaSe₂-based thin-film solar cells. Improved performance is due to higher fill factor. Progress in Photovoltaics: Research and Applications This short communication reports on achieving 18.78% total-area conversion efficiency for a ZnO/CdS/Cu(In,Ga)Se₂/Mo



We report a new record total-area efficiency of 19.79% for CuInGaSe₂-based thin-film solar cells. Improved performance is due to higher fill factor. Progress in Photovoltaics: Research and Applications. Volume 16, Issue 3 p. 235-239. Short Communication: Accelerated Publication: Research.

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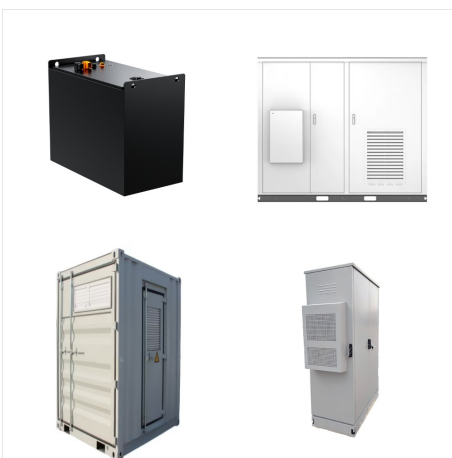
SHORT COMMUNICATION



Progress in Photovoltaics: Research and Applications. Volume 21, Issue 1 p. 72-76. Short Communication. Thin film solar cell with 8.4% power conversion efficiency using an earth-abundant Cu₂ZnSnS₄ absorber.



Recent progress in amorphous silicon alloy leading to 13% stable cell efficiency. Conference Record, 26th IEEE Photovoltaic Specialists Conference, Anaheim, September/October 1997; 563-568. 32. Grätzel M. Perspectives for dye-sensitised nanocrystalline solar cells. Progress in Photovoltaics: Research and Applications 2000; 8: 171-186. 33.



ABSTRACT A squaraine dye is tested for novel application in a near-infrared-active organic photovoltaic cell that is subsequently optimized to obtain a power conversion efficiency of $2.4 \pm 0.3\%$. Progress in Photovoltaics: Research and Applications Volume 22, Issue 4 p. 488-493. Short Communication. Controlling J-aggregate formation for

PROGRESS IN PHOTOVOLTAICS SHORT COMMUNICATION



We report a new state of the art in thin-film polycrystalline $\text{Cu}(\text{In,Ga})\text{Se}_2$ -based solar cells with the attainment of energy conversion efficiencies of 19.5%. An analysis of the performance of $\text{Cu}(\text{In,Ga})\text{Se}_2$ solar cells in terms of some absorber properties and other derived diode parameters is presented. The analysis reveals that the highest-performance cells can