

Amorphous Zn(O,Se) buffer layer for Cu(In,Ga)Se₂ thin film solar cells

Abdalla, Akram; Danilson, Mati; Oueslati, Souhaib; Pilvet, Maris; Bereznev, Sergei Materials science in semiconductor processing 2021 / art. 105862 <https://doi.org/10.1016/j.mssp.2021.105862> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Characterization of tetrahedrite Cu₁₀Cd₂Sb₄S₁₃ monograin materials grown in molten CdI₂ and LiI

Ghisani, Fairouz; Timmo, Kristi; Altosaar, Mare; Mikli, Valdek; Pilvet, Maris; Kaupmees, Reelika; Krustok, Jüri; Grossberg, Maarja; Kauk-Kuusik, Marit Thin solid films 2021 / art. 138980 <https://doi.org/10.1016/j.tsf.2021.138980> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Comparative study of SnS recrystallization in molten CdI₂, SnCl₂ and KI

Timmo, Kristi; Kauk-Kuusik, Marit; Pilvet, Maris; Mikli, Valdek; Kärber, Erki; Raadik, Taavi; Leinemann, Inga; Altosaar, Mare; Raudoja, Jaan Physica status solidi (c) 2016 / p. 8-12 : ill <https://doi.org/10.1002/pssc.201510082> [Journal metrics at Scopus](#) [Article at Scopus](#) [Article at WOS](#)

Compositionally tunable structure and optical properties of Cu_{1.85}(Cd_xZn_{1-x})_{1.1}SnS_{4.1} (0 ≤ x ≤ 1) monograin powders

Pilvet, Maris; Kauk-Kuusik, Marit; Altosaar, Mare; Grossberg, Maarja; Danilson, Mati; Timmo, Kristi; Mere, Arvo; Mikli, Valdek Thin solid films 2015 / p. 180-183 : ill <https://doi.org/10.1016/j.tsf.2014.10.091> [Conference Proceedings at Scopus](#) [Article at Scopus](#) [Conference Proceedings at WOS](#) [Article at WOS](#)

Comprehensive study of photoluminescence and device properties in Cu₂Zn(Sn_{1-x}Gex)S₄ monograins and monograin layer solar cells

Mengü, Idil; Muska, Katri; Pilvet, Maris; Mikli, Valdek; Dudutiene, Evelina; Kondrotas, Rokas; Krustok, Jüri; Kauk-Kuusik, Marit; Grossberg-Kuusk, Maarja Solar energy materials and solar cells 2024 / art. 113124 <https://doi.org/10.1016/j.solmat.2024.113124> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Cu₂ZnSnS₄ monograin layer solar cells for flexible photovoltaic applications

Kauk-Kuusik, Marit; Timmo, Kristi; Pilvet, Maris; Muska, Katri; Danilson, Mati; Krustok, Jüri; Josepson, Raavo; Mikli, Valdek; Grossberg-Kuusk, Maarja Journal of materials chemistry A 2023 / p. 23640-23652 <https://doi.org/10.1039/D3TA04541B> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Cu₂ZnSnSe₄ thin films by selenization of stacked binaries

Volobujeva, Olga; Mellikov, Enn; Bereznev, Sergei; Raudoja, Jaan; Otto, Kairi; Pilvet, Maris; Raadik, Taavi E-MRS Spring Meeting 2012 - Symposium B : Strasbourg, France, May 14-18, 2012 : program and abstract book 2012 / p. 20

Cu-In and Cu-Zn-Sn films as precursors for production of CuInSe₂ and Cu₂ZnSnSe₄ thin films

Volobujeva, Olga; Mellikov, Enn; Raudoja, Jaan; Bereznev, Sergei; Pilvet, Maris Thin-film compound semiconductor photovoltaics - 2009 2009 / p. M05-40

Cu(In,Ga)Se₂ monograin powders with different Ga content for solar cells

Timmo, Kristi; Kauk-Kuusik, Marit; Pilvet, Maris; Altosaar, Mare; Grossberg, Maarja; Danilson, Mati; Kaupmees, Reelika; Mikli, Valdek; Raudoja, Jaan; Varema, Tiit Solar energy 2018 / p. 648-655 : ill <https://doi.org/10.1016/j.solener.2018.10.078> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Detailed insight into the CZTS/CdS interface modification by air annealing in monograin layer solar cells

Kauk-Kuusik, Marit; Timmo, Kristi; Muska, Katri; Pilvet, Maris; Krustok, Jüri; Josepson, Raavo; Brammertz, Guy; Vermang, Bart; Danilson, Mati; Grossberg, Maarja ACS Applied Energy Materials 2021 / p. 12374-12382 <https://doi.org/10.1021/acsaem.1c02186> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Development of band gap tuned Cu₂Zn(Sn_{1-x}Gex)S₄ monograin powders

Mengü, Idil; Grossberg-Kuusk, Maarja; Muska, Katri; Pilvet, Maris; Mikli, Valdek; Kaupmees, Reelika; Krustok, Jüri; Kauk-Kuusik, Marit Graduate School of Functional Materials and Technology (GSFMT) Scientific Conference : abstracts 2022 / 39 I. [Graduate School of Functional Materials and Technology \(GSFMT\) Scientific Conference 2022](#)

Effect of absorber surface modification on the optoelectronic properties of Cu₂CdGeSe₄ solar cells

Li, Xiaofeng; Pilvet, Maris; Timmo, Kristi; Grossberg, Maarja; Danilson, Mati; Mikli, Valdek; Kauk-Kuusik, Marit Thin solid films 2020 / art. 137822, 7 p. : ill <https://doi.org/10.1016/j.tsf.2020.137822> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Effects of sulphur and tin disulphide vapour treatments of Cu₂ZnSnS(Se)₄ absorber materials for monograin solar cells

Kauk, Marit; Muska, Katri; Altosaar, Mare; Raudoja, Jaan; Pilvet, Maris; Varema, Tiit; Timmo, Kristi; Volobujeva, Olga Energy procedia 2011 / p. 197-202 <https://www.sciencedirect.com/science/article/pii/S1876610211020030>

Efficiency enhancement of Cu₂ZnSnS₄ monograin layer solar cells via absorber post-growth treatments

Timmo, Kristi; Dolcet Sadurni, Marc; Pilvet, Maris; Muska, Katri; Altosaar, Mare; Mikli, Valdek; Atlan, Fabien; Guc, Maxim; Izquierdo-Roca, Victor; Grossberg-Kuusk, Maarja; Kauk-Kuusik, Marit Solar energy materials and solar cells 2023 / art. 112090

Enhanced grain orientation in Sb₂Se₃ thin films deposited on Mo/BSG substrates via RF-sputtering and selenization
Uslu, Mehmet Ender; Muska, Katri; Pilvet, Maris; Bereznev, Sergei; Mikli, Valdek; Kauk-Kuusik, Marit; Grossberg-Kuusk, Maarja Materials science in semiconductor processing 2024 / art. 108835 <https://doi.org/10.1016/j.mssp.2024.108835> Journal metrics at Scopus Article at Scopus Journal metrics at WOS Article at WOS

Impact of Cu₂ZnSn(SexS_{1-x})₄ (x=0.3) compositional ratios on the monograin powder properties and solar cells
Muska, Katri; Kauk-Kuusik, Marit; Grossberg, Maarja; Altosaar, Mare; Pilvet, Maris; Varema, Tiit; Timmo, Kristi; Volobujeva, Olga; Mere, Arvo Thin solid films 2013 / p. 35-38 : ill <https://doi.org/10.1016/j.tsf.2012.10.031> Journal metrics at Scopus Article at Scopus Journal metrics at WOS Article at WOS

Impact of Li and K co-doping on the optoelectronic properties of CZTS monograin powder
Muska, Katri; Timmo, Kristi; Pilvet, Maris; Kaupmees, Reelika; Raadik, Taavi; Mikli, Valdek; Grossberg-Kuusk, Maarja; Krustok, Jüri; Josepson, Raavo; Lange, Sven; Kauk-Kuusik, Marit Solar energy materials and solar cells 2023 / art. 112182 : ill <https://doi.org/10.1016/j.solmat.2023.112182> Journal metrics at Scopus Article at Scopus Journal metrics at WOS Article at WOS

In Ambient Air Processed Cu₂ZnSnS₄ Absorber Layers from DMSO-Based Precursors: Enhanced Efficiency via Device Post-annealing
Nasyori, Achmad; Pilvet, Maris; Saar, Annabel; Krustok, Jüri; Danilson, Mati; Kaupmees, Reelika; Mikli, Valdek; Gong, Yuancai; Grossberg-Kuusk, Maarja; Kauk-Kuusik, Marit Journal of Materials Chemistry A 2025 <https://doi.org/10.1039/D5TA04554A>

Influence of alkali iodide fluxes on Cu₂ZnSnS₄ monograin powder properties and performance of solar cells
Timmo, Kristi; Pilvet, Maris; Muska, Katri; Altosaar, Mare; Mikli, Valdek; Kaupmees, Reelika; Josepson, Raavo; Krustok, Jüri; Grossberg-Kuusk, Maarja; Kauk-Kuusik, Marit Materials advances 2023 / p. 4509-4519 : ill <https://doi.org/10.1039/D3MA00444A> Journal metrics at Scopus Article at Scopus Journal metrics at WOS Article at WOS

Influence of order-disorder in Cu₂ZnSnS₄ powders on the performance of monograin layer solar cells
Timmo, Kristi; Kauk-Kuusik, Marit; Pilvet, Maris; Raadik, Taavi; Altosaar, Mare; Danilson, Mati; Grossberg, Maarja; Raudoja, Jaan; Ernits, Kaia Thin solid films 2017 / p. 122-126 : ill <https://doi.org/10.1016/j.tsf.2016.10.017> Journal metrics at Scopus Article at Scopus Journal metrics at WOS Article at WOS

Keemiliselt sadestatud CdS-i plasmasöövitus mõju CuInSe₂/CdS fotoelemendi väljundparameetritele
Pilvet, Maris; Varema, Tiit XXIX Eesti keemiapäevad : teaduskonverentsi ettekannete teesid = 29th Estonian Chemistry Days : abstracts of scientific conference 2005 / lk. 86

Kesterite monograins for solar cells and water splitting applications
Oueslati, Souhaib; Pilvet, Maris; Grossberg, Maarja; Kauk-Kuusik, Marit; Krustok, Jüri; Meissner, Dieter Thin solid films 2021 / art. 138981 <https://doi.org/10.1016/j.tsf.2021.138981> Journal metrics at Scopus Article at Scopus Journal metrics at WOS Article at WOS

Mo pinna eeltötluste mõju MoSe₂ omadustele
Kaupmees, Liina; Pilvet, Maris; Altosaar, Mare XXIX Eesti keemiapäevad : teaduskonverentsi ettekannete teesid = 29th Estonian Chemistry Days : abstracts of scientific conference 2005 / lk. 36-37

Modification of the optoelectronic properties of Cu₂CdSnS₄ through low-temperature annealing
Pilvet, Maris; Kauk-Kuusik, Marit; Grossberg, Maarja; Raadik, Taavi; Mikli, Valdek; Traksmäa, Rainer; Raudoja, Jaan; Timmo, Kristi; Krustok, Jüri Journal of alloys and compounds 2017 / p. 820-825 : ill <https://doi.org/10.1016/j.jallcom.2017.06.307> Journal metrics at Scopus Article at Scopus Journal metrics at WOS Article at WOS

Nano-scale sulfurization of the Cu₂ZnSnSe₄ crystal surface for photovoltaic applications
Kauk-Kuusik, Marit; Li, Xiaofeng; Pilvet, Maris; Timmo, Kristi; Mikli, Valdek; Kaupmees, Reelika; Danilson, Mati; Grossberg, Maarja Journal of materials chemistry A 2019 / p. 24884-24890 : ill <https://doi.org/10.1039/C9TA08020A> Journal metrics at Scopus Article at Scopus Journal metrics at WOS Article at WOS

Novel Cu₂CdSnS₄ and Cu₂ZnGeSe₄ absorber materials for monograin layer solar cell application
Timmo, Kristi; Kauk-Kuusik, Marit; Altosaar, Mare; Raudoja, Jaan; Raadik, Taavi; Grossberg, Maarja; Varema, Tiit; Pilvet, Maris; Leinemann, Inga; Volobujeva, Olga; Mellikov, Enn EU PVSEC proceedings 2013 / p. 2385-2388 : ill

Photoelectrochemical properties and band positions of Cd-substituted tetrahedrite Cu₁₀Cd₂Sb₄S₁₃ monograin materials grown in molten CdI₂ and LiI
Ghisani, Fairouz; Timmo, Kristi; Altosaar, Mare; Oueslati, Souhaib; Pilvet, Maris; Kauk-Kuusik, Marit Thin Solid Films 2022 / art. 139030 <https://doi.org/10.1016/j.tsf.2021.139030> Journal metrics at Scopus Article at Scopus Journal metrics at WOS Article at WOS

Post-growth annealing effect on the performance of Cu₂ZnSnSe₄ monograin layer solar cells

Kauk-Kuusik, Marit; Altosaar, Mare; Muska, Katri; Pilvet, Maris; Raudoja, Jaan; Timmo, Kristi; Varema, Tiit; Grossberg, Maarja; Mellikov, Enn; Volobujeva, Olga Thin solid films 2013 / p. 18-21 : ill <https://doi.org/10.1016/j.tsf.2012.11.075> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Pyrite as promising monograin layer solar cell absorber material for in-situ solar cell fabrication on the Moon
Kristmann, Katriin; Raadik, Taavi; Altosaar, Mare; Grossberg-Kuusk, Maarja; Krustok, Jüri; Pilvet, Maris; Mikli, Valdek; Kauk-Kuusik, Marit; Makaya, Advenit Acta Astronautica 2022 / P. 420-424 <https://doi.org/10.1016/j.actaastro.2022.07.043> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Pyrite as prospective absorber material for monograin layer solar cell
Kristmann, Katriin; Altosaar, Mare; Raudoja, Jaan; Krustok, Jüri; Pilvet, Maris; Mikli, Valdek; Grossberg, Maarja; Danilson, Mati; Raadik, Taavi Thin Solid Films 2022 / art. 139068 : ill <https://doi.org/10.1016/j.tsf.2021.139068> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Pyrite as prospective monograin layer solar cell absorber material for in-situ solar cell fabrication on the Moon
Kristmann, Katriin; Raadik, Taavi; Altosaar, Mare; Grossberg, Maarja; Krustok, Jüri; Pilvet, Maris; Mikli, Valdek; Kauk-Kuusik, Marit IAC 2021 congress proceedings 2021 / p. 1-6 : ill <https://deepzone3.ttu.ee/~juri.krustok/PDF-s/IAC-21.C3.4.7.x64087.pdf> [Conference Proceedings at Scopus](#) [Article at Scopus](#)

Pyrite FeS₂ solar cells fabrication for lunar base energy production
Kristmann, Katriin; Raadik, Taavi; Altosaar, Mare; Grossberg-Kuusk, Maarja; Krustok, Jüri; Pilvet, Maris; Mikli, Valdek; Kauk-Kuusik, Marit; Makaya, Advenit IAC 2022 congress proceedings 2022 / art. 190266 [Pyrite FeS₂ solar cells fabrication for lunar base energy production](#) [Conference proceedings at Scopus](#) [Article at Scopus](#)

Reaction pathway to CZTSe formation in CdI₂ : Part 2: Chemical reactions and enthalpies in mixtures of CdI₂–CuSe–SnSe and CdI₂–CuSe–SnSe–ZnSe
Leinemann, Inga; Pilvet, Maris; Kaljuvee, Tiit; Traksmäa, Rainer; Altosaar, Mare Journal of thermal analysis and calorimetry 2018 / p. 433–441 <https://doi.org/10.1007/s10973-018-7415-4> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Reduced recombination through the CZTS/CdS interface engineering in monograin layer solar cells
Kauk-Kuusik, Marit; Timmo, Kristi; Muska, Katri; Pilvet, Maris; Krustok, Jüri; Danilson, Mati; Mikli, Valdek; Josepson, Raavo; Grossberg, Maarja JPhys Energy 2022 / art. 024007 <https://doi.org/10.1088/2515-7655/ac618d> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Study of Cu₂CdGeSe₄ monograin powders synthesized by molten salt method for photovoltaic applications
Kauk-Kuusik, Marit; Li, Xiaofeng; Pilvet, Maris; Timmo, Kristi; Grossberg, Maarja; Raadik, Taavi; Danilson, Mati; Mikli, Valdek; Altosaar, Mare; Krustok, Jüri; Raudoja, Jaan Thin solid films 2018 / p. 15-19 <https://doi.org/10.1016/j.tsf.2018.09.025> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Study of Cu₂(Zn,Cd)SnS₄ absorber materials for monograin layer solar cells = Päikesepatareides kasutatavate Cu₂(Zn,Cd)SnS₄ absorbermaterjalide uurimine
Pilvet, Maris 2017 <https://digi.lib.ttu.ee/78446> https://www.ester.ee/record=b4689398*est

Study of the structure and optoelectronic properties of Cu₂Ge(SexS_{1-x})₃ microcrystalline powders
Li, Xiaofeng; Timmo, Kristi; Grossberg, Maarja; Pilvet, Maris; Kaupmees, Reelika; Krustok, Jüri; Muska, Katri; Mikli, Valdek; Kauk-Kuusik, Marit Thin solid films 2022 / art. 139053, 6 p. : ill <https://doi.org/10.1016/j.tsf.2021.139053> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Sulfur-containing Cu₂ZnSnSe₄ monograin powders for solar cells
Timmo, Kristi; Altosaar, Mare; Raudoja, Jaan; Muska, Katri; Pilvet, Maris; Kauk, Marit; Varema, Tiit; Danilson, Mati; Volobujeva, Olga; Mellikov, Enn Solar energy materials & solar cells 2010 / 11, p. 1889-1892 : ill

Synthesis and characterisation of Cu₂ZnSnSe₄ thin films prepared via a vacuum evaporation-based route
Volobujeva, Olga; Bereznev, Sergei; Raudoja, Jaan; Otto, Kairi; Pilvet, Maris; Mellikov, Enn Thin solid films 2013 / p. 48-51 : ill <https://doi.org/10.1016/j.tsf.2012.12.080> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Synthesis and characterization of tetrahedrite Cu₁₀Cd₂Sb₄S₁₃ monograin material for photovoltaic application
Ghisani, Fairouz; Timmo, Kristi; Altosaar, Mare; Raudoja, Jaan; Mikli, Valdek; Pilvet, Maris; Kauk-Kuusik, Marit; Grossberg, Maarja Materials science in semiconductor processing 2020 / art. 104973 <https://doi.org/10.1016/j.mssp.2020.104973> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Synthesis of Cu₂ZnSnS₄ monograin powders with different compositions
Muska, Katri; Kauk, Marit; Altosaar, Mare; Pilvet, Maris; Grossberg, Maarja; Volobujeva, Olga Energy procedia 2011 / p. 203-207

The effect of Ag alloying of Cu₂(Zn,Cd)SnS₄ on the monograin powder properties and solar cell performance
Timmo, Kristi; Altosaar, Mare; Pilvet, Maris; Mikli, Valdek; Grossberg, Maarja; Danilson, Mati; Raadik, Taavi; Josepson, Raavo; Krustok, Jüri; Kauk-Kuusik, Marit Journal of materials chemistry A 2019 / p. 24281-24291 : ill
<https://doi.org/10.1039/C9TA07768E> TTÜ teadlased tõstsid uue põlvkonna päikesepaneelide tõhusust [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

The effect of S/Se ratio on the properties of Cu₂CdGe(SxSe_{1-x})₄ microcrystalline powders for photovoltaic applications
Li, Xiaofeng; Pilvet, Maris; Timmo, Kristi; Grossberg, Maarja; Mikli, Valdek; Kauk-Kuusik, Marit Solar energy 2020 / p. 646–652 : ill <https://doi.org/10.1016/j.solener.2020.09.045> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

The effect of S/SE ratio on the properties of Cu₂CdGe(SxSe_{1-x})₄ monograin powders for photovoltaic applications
Li, Xiaofeng; Kauk-Kuusik, Marit; Timmo, Kristi; Pilvet, Maris; Grossberg, Maarja; Raadik, Taavi; Danilson, Mati; Mikli, Valdek GSFMT Scientific Conference 2020 : Tallinn, February 4-5, 2020 : abstracts 2020 / p. 52 <http://fntdk.ut.ee/wp-content/uploads/2020/01/GSFMT2020.pdf>