

#### Antimicrobial particles based on Cu<sub>2</sub>ZnSnS<sub>4</sub> monograins

Žalneravicius, Rokas; Pakštas, Vidas; Grinciene, Giedre; Klimas, Vaclovas; Paškevičius, Algimantas; Timmo, Kristi; Kauk-Kuusik, Marit; Franckevicius, Marius; Niaura, Gediminas; Talaikis, Martynas; Jagminas, Arunas; Ramanavicius, Arunas Colloids and Surfaces B: Biointerfaces 2023 / art. 113275 <https://doi.org/10.1016/j.colsurfb.2023.113275> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

#### Band gap engineering by cationic substitution in Sn(Zr<sub>1-x</sub>Ti<sub>x</sub>)Se<sub>3</sub> alloy for bottom sub-cell application in solar cells

Kondrotas, Rokas; Pakštas, Vidas; Franckevicius, Marius; Suchodolskis, Arturas; Tumenas, Saulius; Jasinskas, Vidmantas; Juskenas, Remigijus; Krotkus, Arunas; Muska, Katri; Kauk-Kuusik, Marit Journal of materials chemistry A 2023 / p. 26488–26498 : ill <https://doi.org/10.1039/D3TA05550G> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

#### Characterization of tetrahedrite Cu<sub>10</sub>Cd<sub>2</sub>Sb<sub>4</sub>S<sub>13</sub> monograin materials grown in molten CdI<sub>2</sub> 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](#)

#### Chemical etching of tetrahedrite Cu<sub>10</sub>Cd<sub>2</sub>Sb<sub>4</sub>S<sub>13</sub> monograin powder materials for solar cell applications

Ghisani, Fairouz; Timmo, Kristi; Altosaar, Mare; Mikli, Valdek; Danilson, Mati; Grossberg, Maarja; Kauk-Kuusik, Marit Materials science in semiconductor processing 2022 / art. 106291 <https://doi.org/10.1016/j.mssp.2021.106291> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

#### Comparative study of SnS recrystallization in molten CdI<sub>2</sub>, SnCl<sub>2</sub> 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<sub>1.85</sub>(Cd<sub>x</sub>Zn<sub>1-x</sub>)<sub>1.1</sub>SnS<sub>4.1</sub> (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 Cu<sub>2</sub>Zn(Sn<sub>1-x</sub>Gex)<sub>4</sub> 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>

#### Cu<sub>2</sub>ZnSnS<sub>4</sub> 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](#)

#### Cu(In,Ga)Se<sub>2</sub> 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/acs.aem.1c02186> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

#### Detailed photoluminescence study of Cu<sub>2</sub>Ge(SSe)<sub>3</sub> microcrystals

Kuusik, Jüri; Kaupmees, Reelika; Li, Xiaofeng; Kauk-Kuusik, Marit; Grossberg, Maarja AIP advances 2021 / art. 085105 <https://doi.org/10.1063/5.0053928> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

#### Development of band gap tuned Cu<sub>2</sub>Zn(Sn<sub>1-x</sub>Gex)<sub>4</sub> 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](#)

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#### Eesti teadlaste osalusel arendatud päikesepaneele saab teha odavatest ja maakoorest laialt levinud materjalidest

Kauk-Kuusik, Marit toostusuudised.ee 2025 [Eesti teadlaste osalusel arendatud päikesepaneele saab teha odavatest ja maakoorest laialt](#)

**Effect of absorber surface modification on the optoelectronic properties of Cu<sub>2</sub>CdGeSe<sub>4</sub> 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](#)

**Effect of germanium incorporation on the properties of kesterite Cu<sub>2</sub>ZnSn(S,Se)<sub>4</sub> monograins**

Oueslati, Souhaib; Grossberg, Maarja; Kauk-Kuusik, Marit; Mikli, Valdek; Ernits, Kaia; Meissner, Dieter; Krustok, Jüri Thin solid films 2019 / p. 315–320 : ill <https://doi.org/10.1016/j.tsf.2018.11.020> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

**Efficiency enhancement of Cu<sub>2</sub>ZnSnS<sub>4</sub> 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 <https://doi.org/10.1016/j.solmat.2022.112090> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

**Enhanced grain orientation in Sb<sub>2</sub>Se<sub>3</sub> thin films deposited on Mo/BSG substrates via RF-sputtering and selenization**

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**Growth of CZTS-based monograins and their application to membrane solar cells**

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**Growth of Cu<sub>2</sub>CDGESE<sub>4</sub> monograin powders in molten salts [Online resource]**

Li, Xiaofeng; Kauk-Kuusik, Marit Tartu Ülikooli ASTRA projekt PER ASPERA : Funktsionaalsed materjalid ja tehnoloogiad : [4.-5. veebr. 2019, Tartu : teesid] 2019 / 2 p <http://fmdtk.ut.ee/teesid-2019/>

**Hydrogen states in mixed-cation CuIn(1-x)Ga<sub>x</sub>Se<sub>2</sub> chalcopyrite alloys : a combined study by first-principles density-functional calculations and muon-spin spectroscopy**

Marinopoulos, Apostolos G.; Vilao, Rui C.; Alberto, Helena Vieira; Ribeiro, E. F. M.; Gil, J. M.; Mengyan, P. W.; Goeks, M. R.; Kauk-Kuusik, Marit; Lord, J. S. Philosophical magazine 2021 / p. 2412-2434 <https://doi.org/10.1080/14786435.2021.1972178> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

**Impact of Cu<sub>2</sub>ZnSn(SexS<sub>1-x</sub>)<sub>4</sub> (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 Cu<sub>2</sub>ZnSnS<sub>4</sub> 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>

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**Influence of alkali iodide fluxes on Cu<sub>2</sub>ZnSnS<sub>4</sub> 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 Cu<sub>2</sub>ZnSnS<sub>4</sub> 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](#)

**Investigation of the solar cell materials Cu(In,Ga)Se<sub>2</sub> and Cu<sub>2</sub>ZnSnS<sub>4</sub> with muon spin spectroscopy and density-functional calculations**

Vilao, Rui C.; Marinopoulos, Apostolos G.; dos Santos, Diego Garcia; Alberto, Helena Vieira; Gil, Joao Campos; Mengyan, Patrick W.; **Kauk-Kuusik, Marit**; Lord, James; Weidinger, Alois Journal of applied physics 2024 / art. 055704  
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#### **Low temperature time resolved photoluminescence in ordered and disordered Cu<sub>2</sub>ZnSnS<sub>4</sub> single crystals**

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#### **Meie Eesti naised : Naisteadlased, kes parandavad tervist, vaimset heaolu, päikeseenergeetikat ja Eesti majandust**

**Velthut-Meikas, Agne; Bachmann, Maie; Leoste, Janika; Grossberg-Kuusk, Maarja; Kauk-Kuusik, Marit** goodnews.ee 2023  
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#### **Modification of the optoelectronic properties of Cu<sub>2</sub>CdSnS<sub>4</sub> 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>  
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#### **Nano-scale sulfurization of the Cu<sub>2</sub>ZnSnSe<sub>4</sub> 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](#)  
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#### **Novel Cu<sub>2</sub>CdSnS<sub>4</sub> and Cu<sub>2</sub>ZnGeSe<sub>4</sub> 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

#### **Observation of band gap fluctuations and carrier localization in Cu<sub>2</sub>CdGeSe<sub>4</sub>**

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#### **Observation of photoluminescence edge emission in CuSbSe<sub>2</sub> absorber material for photovoltaic applications**

**Penežko, Aleksei; Kauk-Kuusik, Marit; Volobujeva, Olga; Traksmäa, Rainer; Grossberg, Maarja** Applied physics letters 2019 / art. 092101, 4 p. : ill <https://doi.org/10.1063/1.5114893> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

#### **Optical and structural properties of orthorhombic and tetragonal polymorphs of Cu<sub>2</sub>CdGeSe<sub>4</sub>**

**Grossberg, Maarja; Raadik, Taavi; Krustok, Jüri; Kauk-Kuusik, Marit; Timmo, Kristi; Kaupmees, Reelika; Mikli, Valdek; Mere, Arvo** Thin solid films 2018 / p. 44-47 <https://doi.org/10.1016/j.tsf.2018.09.031> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

#### **Optical study of valence band splitting and resonant acceptor states in Cu<sub>2</sub>GeS<sub>3</sub> microcrystals**

**Krustok, Jüri; Kaupmees, Reelika; Kokla, Joel; Kauk-Kuusik, Marit** Applied physics letters 2024 / art. 242111  
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#### **Photoluminescence study of deep donor- deep acceptor pairs in Cu<sub>2</sub>ZnSnS<sub>4</sub>**

**Krustok, Jüri; Raadik, Taavi; Grossberg, Maarja; Kauk-Kuusik, Marit; Trifiletti, V.; Binetti, S.** Materials science in semiconductor

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### **Photoluminescence study of disordering in the cation sublattice of Cu<sub>2</sub>ZnSnS<sub>4</sub>**

**Grossberg, Maarja; Krustok, Jüri; Raadik, Taavi; Kauk-Kuusik, Marit; Raudoja, Jaan** Current applied physics 2014 / p. 1424-1427 : ill <https://doi.org/10.1016/j.cap.2014.08.013> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

### **p-n junction improvements of Cu<sub>2</sub>ZnSnS<sub>4</sub>/CdS monograin layer solar cells**

**Kauk-Kuusik, Marit; Timmo, Kristi; Danilson, Mati; Altosaar, Mare; Grossberg, Maarja;** Ernits, Kaia Applied surface science 2015 / p. 795-798 : ill <https://doi.org/10.1016/j.apsusc.2015.09.094> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

### **Post-growth annealing effect on the performance of Cu<sub>2</sub>ZnSnSe<sub>4</sub> 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](#)

### **Preparation and characterization of SbSeI thin films**

**Dolcet Sadurni, Marc; Timmo, Kristi; Mikli, Valdek; Volobujeva, Olga; Mengü, Idil; Krustok, Jüri; Grossberg-Kuusk, Maarja; Kauk-Kuusik, Marit** Journal of science: Advanced materials and devices 2024 / art. 100664 <https://doi.org/10.1016/j.jsamd.2023.100664>

### **Properties of Cu-Sb-Se thin films deposited by magnetron co-sputtering for solar cell applications**

**Penežko, Aleksei; Kauk-Kuusik, Marit; Volobujeva, Olga; Grossberg, Maarja** Thin solid films 2021 / art. 139004 <https://doi.org/10.1016/j.tsf.2021.139004> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

### **Properties of CuSbSe<sub>2</sub> and Sb<sub>2</sub>Se<sub>3</sub> absorber materials for solar cell applications = Päikesepatarei absorbermaterjalide CuSbSe<sub>2</sub> ja Sb<sub>2</sub>Se<sub>3</sub> omaduste uurimine**

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### **Properties of CuSbSe<sub>2</sub> thin film solar cell absorbers deposited by magnetron co-sputtering**

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### **Pulsed laser deposition of chalcogenide sulfides from multi- and single-component targets: the non-stoichiometric material transfer**

Schou, Jorgen; Gansukh, Mungunshagai; Ettlinger, Rebecca B.; Cazzaniga, Andrea; **Grossberg, Maarja; Kauk-Kuusik, Marit;** Canulescu, Stela Applied physics. A, Materials science & processing 2018 / Art. nr. 78 <https://doi.org/10.1007/s00339-017-1475-3> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

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### **Pyrite as promising monograin layer solar cell absorber material for in-situ solar cell fabrication on the Moon**

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