

**Analysis of grain orientation and defects in Sb<sub>2</sub>Se<sub>3</sub> solar cells fabricated by close-spaced sublimation**  
**Krautmann, Robert; Spalatu, Nicolae;** Gunder, Rene; Abou-Ras, Daniel; Unold, Thomas; Schorr, Susan; **Oja Acik, Ilona; Krunks, Malle** GSFMT Scientific Conference 2021 : Tartu, June 14-15, 2021 : abstracts 2021 / P 17 [https://fntdk.ut.ee/wp-content/uploads/2021/06/GSFMT\\_abstractbook\\_2021.pdf](https://fntdk.ut.ee/wp-content/uploads/2021/06/GSFMT_abstractbook_2021.pdf)

**Analysis of grain orientation and defects in Sb<sub>2</sub>Se<sub>3</sub> solar cells fabricated by close-spaced sublimation : [journal article]**  
**Krautmann, Robert; Spalatu, Nicolae;** Gunder, Rene; Abou-Ras, Daniel; Unold, Thomas; Schorr, Susan; **Krunks, Malle; Oja Acik, Ilona** Solar energy 2021 / p. 494-500 <https://doi.org/10.1016/j.solener.2021.07.022> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

**Bulk and interface recombination in TiO<sub>2</sub>/Sb<sub>2</sub>Se<sub>3</sub> solar cells**  
**Krautmann, Robert; Josepson, Raavo; Spalatu, Nicolae; Oja Acik, Ilona** Graduate School of Functional Materials and Technology (GSFMT) Scientific Conference : abstracts 2022 / p. 28 [Graduate School of Functional Materials and Technology \(GSFMT\) Scientific Conference 2022](#)

**Corrigendum to “Screening and optimization of processing temperature for Sb<sub>2</sub>Se<sub>3</sub> thin film growth protocol: Interrelation between grain structure, interface intermixing and solar cell performance” [Solar Energy Mater. Solar Cell. 225 (2021) 1–13 111045](S092702482100088X)(10.1016/j.solmat.2021.111045)**  
**Spalatu, Nicolae; Krautmann, Robert; Katerski, Atanas; Kärber, Erki; Josepson, Raavo; Hiie, Jaan; Oja Acik, Ilona; Krunks, Malle** Solar Energy Materials and Solar Cells 2021 / Art. 111098 <https://doi.org/10.1016/j.solmat.2021.111098> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

**Development of Bi<sub>2</sub>S<sub>3</sub> thin-film solar cells by close-spaced sublimation**  
**Koltsov, Mykhailo; Krautmann, Robert; Gopi, Sajeesh Vadakkedath; Hiie, Jaan; Krunks, Malle; Oja Acik, Ilona; Spalatu, Nicolae** Graduate School of Functional Materials and Technology (GSFMT) Scientific Conference : abstracts 2022 / 25 I. [Graduate School of Functional Materials and Technology \(GSFMT\) Scientific Conference 2022](#)

**Development of sb<sub>2</sub>se<sub>3</sub> and sb<sub>2</sub>s<sub>3</sub> solar cells by close-spaced sublimation**  
**Krautmann, Robert; Spalatu, Nicolae; Oja Acik, Ilona** GSFMT Scientific Conference 2023 : Tartu, 23-24 May, 2023 : abstracts 2023 <https://fntdk.ut.ee/programm-2023/>

**Development of Sb<sub>2</sub>Se<sub>3</sub> and Sb<sub>2</sub>S<sub>3</sub> thin film solar cells by close-spaced sublimation = Sb<sub>2</sub>Se<sub>3</sub> ja Sb<sub>2</sub>S<sub>3</sub> õhukesekileliste päikesepatareide arendamine lähidistants-sublimatsiooni meetodil**  
**Krautmann, Robert** 2023 <https://doi.org/10.23658/taltech.41/2023> <https://digikogu.taltech.ee/et/Item/e7e64926-5d49-40ad-8b3a-e225ea034f7d> [https://www.ester.ee/record=b5573313\\*est](https://www.ester.ee/record=b5573313*est)

**Low processing temperatures explored in Sb<sub>2</sub>S<sub>3</sub> solar cells by close-spaced sublimation and analysis of bulk and interface related defects**  
**Krautmann, Robert; Spalatu, Nicolae; Josepson, Raavo;** Nedzinskas, Ramunas; Kondrotas, Rokas; Gržibovskis, R.; Vembris, Aivars; **Krunks, Malle; Oja Acik, Ilona** Solar energy materials and solar cells 2023 / art. 112139, 9 p. : ill <https://doi.org/10.1016/j.solmat.2022.112139> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

**Optimization of VTD Sb<sub>2</sub>Se<sub>3</sub> absorber growth rate in CdS/Sb<sub>2</sub>Se<sub>3</sub> thin film solar cells : A defect perspective on chloride vs non-chloride based devices**  
**Gopi, Sajeesh Vadakkedath; Krautmann, Robert; Katerski, Atanas; Josepson, Raavo; Untila, Dumitru; Hiie, Jaan; Krunks, Malle; Oja Acik, Ilona; Spalatu, Nicolae** Solar energy materials and solar cells 2025 / art. 113856 <https://doi.org/10.1016/j.solmat.2025.113856>

**Post deposition annealing effect on properties of CdS films and its impact on CdS/Sb<sub>2</sub>Se<sub>3</sub> solar cells performance**  
**Gopi, Sajeesh Vadakkedath; Spalatu, Nicolae; Basnayaka, Madhawa; Krautmann, Robert; Katerski, Atanas; Josepson, Raavo;** Gržibovskis, Raitis; Vembris, Aivars; **Krunks, Malle; Oja Acik, Ilona** Frontiers in Energy Research 2023 / art. 1162576, 12 p <https://doi.org/10.3389/fenrg.2023.1162576> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

**A post-deposition annealing approach for organic residues control in TiO<sub>2</sub> and its impact on Sb<sub>2</sub>Se<sub>3</sub>/TiO<sub>2</sub> device performance**  
**Koltsov, Mykhailo; Krautmann, Robert; Katerski, Atanas;** Matciuc, Natalia; **Krunks, Malle; Oja Acik, Ilona; Spalatu, Nicolae** Faraday Discussions 2022 / p. 273-286 <https://doi.org/10.1039/D2FD00064D> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

**Post-deposition processing for tuning the properties of Sb<sub>2</sub>Se<sub>3</sub> thin films absorber layer grown by close-spaced sublimation**  
**Krautmann, Robert; Spalatu, Nicolae; Hiie, Jaan; Katerski, Atanas; Oja Acik, Ilona; Krunks, Malle** GSFMT Scientific Conference 2020 : Tallinn, February 4-5, 2020 : abstracts 2020 / p. 47 <http://fntdk.ut.ee/wp-content/uploads/2020/01/GSFMT2020.pdf>

**Robert Krautmann, "Päikesepatareid annavad vunki värvkõrguseadmetele". Teadus 3 minutiga 2022.11.02**  
**Krautmann, Robert** Eesti Teaduste Akadeemia : Youtube kanal 2022 / video [Robert Krautmann, "Päikesepatareid annavad vunki](#)

[värkvõrguseadmetele". Teadus 3 minutiga 2022.11.02 „Teadus 3 minutiga“ finaalgala 2022. 11.02.2022](#)

**Sb<sub>2</sub>S<sub>3</sub> solar cells with TiO<sub>2</sub> electron transporting layers synthesized by ALD and USP methods**

**Dedova, Tatjana; Krautmann, Robert; Rusu, Marin; Katerski, Atanas; Krunks, Malle; Unold, Thomas; Spalatu, Nicolae; Mere, Arvo; Sydorenko, Jekaterina; Sibinski, Maciej; Oja Acik, Ilona** Solar energy materials and solar cells 2025 / art. 113279  
<https://doi.org/10.1016/j.solmat.2024.113279>

**Screening and optimization of processing temperature for Sb<sub>2</sub>Se<sub>3</sub> thin film growth protocol : interrelation between grain structure, interface intermixing and solar cell performance**

**Spalatu, Nicolae; Krautmann, Robert; Katerski, Atanas; Kärber, Erki; Josepson, Raavo; Hiie, Jaan; Oja Acik, Ilona; Krunks, Malle** Solar energy materials and solar cells 2021 / art. 111045, 13 p. : ill <https://doi.org/10.1016/j.solmat.2021.111045> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

**Teadus 3 minutiga : päikesepatareid annavad vunki värkvõrguseadmetele [Võrguväljaanne]**

Krautmann, Robert novaator.err.ee 2022 "[Teadus 3 minutiga: päikesepatareid annavad vunki värkvõrguseadmetele](#)"

**Värkvõrgule võivad tulevikus vunki anda päikesepatareid [võrguväljaanne]**

**Krautmann, Robert** novaator.err.ee 2022 "[Värkvõrgule võivad tulevikus vunki anda päikesepatareid](#)"

**Üliõhuke päikesepaneel avab energia tootmisele uued uksed**

Alvela, Ain; **Krautmann, Robert** novaator.err.ee 2023 [Üliõhuke päikesepaneel avab energia tootmisele uued uksed](#)  
<https://digikogu.taltech.ee/et/Item/e7e64926-5d49-40ad-8b3a-e225ea034f7d> Ученый из Эстонии разрабатывает солнечные панели, которые изменят мир