

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

**Penežko, Aleksei; Kauk-Kuusik, Marit; Volobujeva, Olga; Traksmaa, 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](#)

**Origin of photoluminescence from antimony selenide**

**Grossberg, Maarja; Volobujeva, Olga; Penežko, Aleksei; Kaupmees, Reelika; Raadik, Taavi; Krustok, Jüri** Journal of alloys and compounds 2020 / art. 152716, 5 p. : ill <https://doi.org/10.1016/j.jallcom.2019.152716> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

**Production of hydrogen from packaging wastes by two-stage pyrolysis**

**Penežko, Aleksei; Pihl, Olga; Suštšik, Dmitri; Nossor, Aleksandr; Khaskhachikh, Vladimir** Waste Management Production of hydrogen from packaging wastes by two-stage pyrolysis 2025 / art. 115068 <https://doi.org/10.1016/j.wasman.2025.115068> <https://www.sciencedirect.com/science/article/pii/S0956053X25004799>

**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**

**Penežko, Aleksei** 2022 <https://doi.org/10.23658/taltech.74/2022> <https://digikogu.taltech.ee/et/Item/8767ee79-5fa2-4d9a-a63a-73835304d779> [https://www.ester.ee/record=b5528448\\*est](https://www.ester.ee/record=b5528448*est)

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

**Penežko, Aleksei; Grossberg, Maarja; Volobujeva, Olga; Kauk-Kuusik, Marit** GSFMT Scientific Conference 2020 : Tallinn, February 4-5, 2020 : abstracts 2020 / p. 71 <http://fmdk.ut.ee/wp-content/uploads/2020/01/GSFMT2020.pdf>

**Studies of novel lowcost absorbers CUSBS<sub>2</sub> and CUSBSE<sub>2</sub> for solar cells [Online resource]**

**Penežko, Aleksei; Grossberg, Maarja; Kauk-Kuusik, Marit** Tartu Ülikooli ASTRA projekt PER ASPERA : Funktsionaalsed materjalid ja tehnoloogiad : [4.-5. veebr. 2019, Tartu : teesid] 2019 / 1 p. : ill <http://fmdk.ut.ee/teesid-2019/>