Towards Stable and Highly Efficient Tin-based Perovskite Solar Cells

Fact Sheet

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<th>Project Information</th>
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<tr>
<td><strong>TinPSC</strong></td>
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<tr>
<td>Grant agreement ID: 751375</td>
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<tr>
<td><strong>Funded under</strong></td>
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<td>H2020-EU.1.3.2.</td>
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<td><strong>Overall budget</strong></td>
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<tr>
<td>€ 185 857,20</td>
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<td><strong>EU contribution</strong></td>
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<td>€ 185 857,20</td>
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<td><strong>Coordinated by</strong></td>
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<tr>
<td>LINKOPINGS UNIVERSITET</td>
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<td>Sweden</td>
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**Objective**

Developing new energy sources is an urgent issue, as fossil fuels will be exhausted in near future. Solar cells system is a promising renewable energy technology that converts sunlight to electricity. Today, crystalline silicon exhibits high power conversion efficiencies (PCE) and dominates the solar panel industry. The problem of silicon solar cells is that it suffers from high production cost due to tedious processing condition. Recently, organic-lead-halide perovskites have offered the promise of a breakthrough for next-generation solar cell devices, and the PCE is up to 22.6% over the past few years. In spite of high efficiency, the presence of toxic lead (Pb) will become problematic in the future for widespread deployment of this technology. It is prospective to replace Pb with less toxic tin (Sn). However, the poor stability (the easily oxidation of Sn2+ to Sn4+ by O2) and low efficiency are two major issues of Sn-based perovskites. This proposal targets air-stable, high efficient Sn-based perovskite solar cells by developing new Sn-based perovskites and electron
transporting layer to match the band energy of perovskites. The expected fruits of the project will contribute to European excellence and competitiveness in renewable energy field. The successful transfer of the results will promote economic growth and job supplies. In addition to the scientific objectives, the proposal will help the fellow to new acquire knowledge and reinforce his quality as an independent researcher, such as creativity, independent thinking, leadership and transfer qualities, which are critical for the fellow to secure a long-term position in a European university/institution, and eventually become a world renowned expert in the energy research field.

**Fields of science**

- engineering and technology > environmental engineering > energy and fuels > renewable energy > solar energy
- agricultural sciences > agriculture, forestry, and fisheries > agriculture > horticulture > fruit growing
- natural sciences > chemical sciences > inorganic chemistry > post-transition metals
- natural sciences > chemical sciences > inorganic chemistry > metalloids

**Programme(s)**

H2020-EU.1.3.2. - Nurturing excellence by means of cross-border and cross-sector mobility

**Topic(s)**

MSCA-IF-2016 - Individual Fellowships

**Call for proposal**

H2020-MSCA-IF-2016

See other projects for this call

**Funding Scheme**

MSCA-IF-EF-ST - Standard EF

**Coordinator**

LINKOPINGS UNIVERSITET
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581 83 Linkoping
Sweden 🇸🇪

Activity type

Higher or Secondary Education Establishments

Links

Contact the organisation 📩 Website 🌐
H2020 collaboration network 🔗

EU contribution

€ 185 857,20

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Permalink: https://cordis.europa.eu/project/id/751375

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