Development of thin film Solar cells based on Wide band Gap kesterite absorbers

Fact Sheet

Project Information

SWInG
Grant agreement ID: 640868

Funded under H2020-EU.3.3.5.

Overall budget € 3 254 755

EU contribution € 3 254 755

Project website

Coordinated by INTERUNIVERSITAIR MICRO-ELECTRONICA CENTRUM Belgium

Start date 1 June 2015

End date 31 May 2018

Objective

The aim of this proposal is to develop wide band gap thin film solar cells based on kesterite absorbers for future application in high efficiency and low cost tandem PV devices. The SWInG working group will focus both on the development of the processes for the synthesis of such solar cells based on the Cu2ZnXY4 (CZXY with X=Sn, Si, Ge and Y= S, Se) compounds and on the understanding of the physical and electrical properties of the high band gap absorber in order to reach high conversion efficiency. The key research challenges will be: developing up-scalable processes for the synthesis of the absorbers; defining the specifications for high quality wide band gap absorbers as well as suitable back contact and buffer/window layers; assessing the potential of this technology for PV applications. The wide band gap thin films solar cells developed in this project are expected to reach a stable efficiency of 15 % on a laboratory scale and 12 % for a mini-module prototype. The publications of specifications for the synthesis of high quality Cu2ZnXY4 absorber as
publications of specifications for the synthesis of high quality Cu2ZnXY4 absorber as well as suitable back/front contact are expected. The lead users will be PV modules manufacturers that work so far with thin films technologies, as well as the companies that design and produce the machines for the synthesis of such devices. The results will be disseminated and communicated to the European PV industries and the scientific community. The intensive exchange of researchers between the partners during the project will also lead to an enhanced European collaboration in the research field of thin film solar cells.

Field of science

/ engineering and technology/materials engineering/coating and films
/ humanities/arts/modern and contemporary art/film

Programme(s)

Topic(s)

Call for proposal

H2020-LCE-2014-1

Funding Scheme

RIA - Research and Innovation action

Coordinator

INTERUNIVERSITAIR MICRO-ELECTRONICA CENTRUM

Address

Kapeldreef 75
3001 Leuven
Belgium

Activity type
Research Organisations

EU contribution
€ 762 657,50

Website
Contact the organisation

Participants (6)

NEDERLANDSE ORGANISATIE VOOR TOEGEPAST
<table>
<thead>
<tr>
<th>Organisation</th>
<th>Country</th>
<th>EU contribution</th>
<th>Address</th>
<th>Activity type</th>
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<tr>
<td>NATUURWETENSCHAPPELIJK ONDERZOEK TNO</td>
<td>Netherlands</td>
<td>€ 598 726.25</td>
<td>Anna Van Buerenplein 1 2595 DA Den Haag</td>
<td>Research Organisations</td>
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<tr>
<td>HELMHOLTZ-ZENTRUM BERLIN FUR MATERIALIEN UND ENERGIE GMBH</td>
<td>Germany</td>
<td>€ 450 000</td>
<td>Hahn Meitner Platz 1 14109 Berlin</td>
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<td>ZENTRUM FUR SONNENENERGIE- UND WASSERSTOFF-FORSCHUNG BADEN-WURTTEMBERG</td>
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<td>€ 500 000</td>
<td>Meitnerstrasse 1 70563 Stuttgart</td>
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<tr>
<td>CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE CNRS</td>
<td>France</td>
<td>€ 400 200</td>
<td>Rue Michel Ange 3 75794 Paris</td>
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<td>UNIVERSITEIT GENT</td>
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EU contribution

€ 200 000

Address
Sint Pietersnieuwstraat 25
9000 Gent

Website

Activity type
Higher or Secondary Education Establishments

Contact the organisation

MIDSUMMER AB

Sweden

EU contribution
€ 343 171,25

Address
Elektronikhojden 6
175 43 Jarfalla

Activity type
Private for-profit entities (excluding Higher or Secondary Education Establishments)

Contact the organisation

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Record number: 196579

Permalink: https://cordis.europa.eu/project/id/640868/

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