

## PVSEC-30 & GPVC 2020 Technical Area Scope

Area	Topic	Technical Area Scope
<b>Technical Area 1</b>	Crystalline and thin film silicon PV	<ol style="list-style-type: none"> <li>1. Silicon feedstock, crystal growing &amp; wafering</li> <li>2. High efficiency industrial solar cell technology</li> <li>3. Advanced passivation &amp; metallization technology</li> <li>4. Carrier selective contacts</li> <li>5. Characterization &amp; modelling</li> <li>6. Si-based tandem solar cells</li> </ol>
<b>Technical Area 2</b>	Chalcogenide thin film PV	<ol style="list-style-type: none"> <li>1. Chalcogenide-based PV materials, theory and modeling: CdTe, CIGS (Cu(In,Ga)(S,Se)<sub>2</sub>, (Cu,Ag)(In,Al)(S,Se)<sub>2</sub>, etc), CZTSSe (Cu<sub>2</sub>ZnSn(S,Se)<sub>4</sub>) and the related alloys</li> <li>2. Chalcogenide thin film synthesis, growth and theoretical/experimental aspects</li> <li>3. Chalcogenide-based solar cell and the related film layers</li> <li>4. Material combination, surfaces/interfaces, contact and device integration</li> <li>5. Material and device characterization, analysis and measurement</li> <li>6. Other related earth-abundant PV materials and devices</li> <li>7. Chalcogenide-based tandem solar cells</li> <li>8. Processing/manufacturing technologies, thin-film PV modules and upscaling</li> </ol> <p>* Kesterite workshop 2020 included</p>
<b>Technical Area 3</b>	Compound semiconductor, concentrator and space PV	<ol style="list-style-type: none"> <li>1 III-V-based devices for terrestrial and space applications Novel cell architectures, materials, technologies and processing for III-V-multi-junction cells and modules. Techniques for integrating concentrating PV system and space solar cells, assemblies and modules.</li> <li>2 Flexible, lightweight and cost-effective solar cells Flexible and lightweight solar cells, sheets and related integration solar systems, thin cell technologies including material growth, cell fabrication and testing, studies on improvement of sheet durability, cost reduction technologies for cell production and integration.</li> <li>3 III-V based tandem/multi-junction solar cells Materials, structures, and devices based on combinations of multiple materials classes —Si, perovskites, chalcogenides and organics with III-Vs, etc. — toward the production and characterization of “hybrid” multi-junction solar cells.</li> </ol>
<b>Technical Area 4</b>	Organic and dye-sensitized solar cells	<ol style="list-style-type: none"> <li>1. Stability and module issue for the OPV and QD/Dye sensitized solar cells</li> <li>2. Flexible and lightweight OPV and sensitized solar cells</li> <li>3. Indoor application</li> <li>4 New materials and devices for the OPV and sensitized solar cells</li> </ol>
<b>Technical Area 5</b>	Perovskite solar cells	<ol style="list-style-type: none"> <li>1. Materials and process for the highly efficient and stable perovskite solar cells</li> <li>2. Large area module</li> <li>3. Pb-free and flexible issues</li> <li>4. Application of perovskite solar cells to new emerging area</li> <li>5. Perovskite based tandem solar cells</li> </ol>
<b>Technical Area 6</b>	Advanced concepts and new emerging materials & PV energy storage, solar fuels and novel applications	<ol style="list-style-type: none"> <li>1. PV hybrid hydrogen generation</li> <li>2. Photoelectrochemical water splitting (PEC)</li> <li>3. Photocatalysts</li> <li>4. Fundamental science and innovative concepts</li> <li>5. New materials and cell</li> <li>6. Materials and technologies for PV related energy storage</li> </ol>
<b>Technical Area 7</b>	Weather and grid connection performance, reliability and standardization	<ol style="list-style-type: none"> <li>1. Module/system reliability</li> <li>2. PV long-term degradation &amp; lifetime</li> <li>3. Module/system test method and equipment</li> <li>4. Weather data and its standardization</li> <li>5. PV test data and its standardization</li> <li>6. ICERE</li> <li>7. PV regional test center for field test</li> </ol>

<p><b>Technical Area 8</b></p>	<p>Systems including BOS components and integrations</p>	<ol style="list-style-type: none"> <li>1. PV module design, manufacture, manufacturing process</li> <li>2. PV inverters and balance of system components (monitoring)</li> <li>3. Sustainability and recycling of PV module</li> <li>4. PV systems integration and its applications (PV + ESS, modeling, design, operations, performance)</li> <li>5. PV system performance, operation and maintenance</li> <li>6. Solar resource and forecasting</li> <li>7. PV on/in building, infrastructure, landscape, water and nature</li> <li>8. PV driven energy management and system integration</li> </ol>
<p><b>Technical Area 9</b></p>	<p>PV deployment : Industry, market, policy and financing</p>	<p>Current and future aspect of PV deployment including PV industry, market, policy and financing</p>