



Call for Abstracts

Area 4: Crystalline Silicon Technologies

Dear Colleagues,

On behalf of the technical program committee it is my pleasure to invite you to submit papers for Area 4: “**Crystalline Silicon Technologies**” of the **35th IEEE Photovoltaic Specialists Conference**, which will be held in **Honolulu, Hawaii**, from **June 20th-25th in 2010**. The IEEE PVSC meeting is the established international platform for presenting PV related research of high scientific level.

The continuing drive for higher conversion efficiencies and lower costs of crystalline Si cells demands an increasingly sophisticated understanding of the materials and processes involved, in order to drive the development of new or improved manufacturing methods, materials and device structures. There have already been tremendous advances in this respect in recent years. However, many challenges remain that need to be addressed in order to reach costs to levels that equate to grid parity in large parts of the world. Area 4 intends to address the critical issues for c-Si based photovoltaic technology and manufacturing. The area has been categorized into five subareas around key themes as presented below. We encourage people to submit papers **on detailed scientific research studies** and **visionary papers** addressing the full range of these fundamental issues and technological challenges in the field, including:

Subarea 4.1: Feedstock and Crystallization

The development of new and improved processes for the production of c-Si feedstock and for crystallization offers an opportunity for improved device costs and efficiencies. In particular, the production of solar grade feedstock material, with properties optimized for photovoltaics, is an area of intense interest and development. In Subarea 4.1 we would like to explore progress in the development and understanding of advanced feedstock and crystallization processes.

Subarea 4.2: Defect Passivation and Advanced Optics

Defect passivation encompasses bulk and surface defects and includes impurities as well as structural defects. Advances in the understanding of these defects, their interactions with each other and how their detrimental impact on device performance can be minimized (through surface passivation using materials like silicon nitride, a-Si:H, aluminum oxide and others; bulk defect passivation and other means) will contribute substantially to materials and devices with better electronic properties and efficiency. On the other hand, advanced optical concepts, such as wavelength-scale





texturing and plasmonics, open the possibility of enhanced light harvesting and will be of increasing importance as the thickness of the active silicon layer is reduced. In Subarea 4.2, we are looking for high quality contributions dealing with the above and related issues.

Subarea 4.3: Device Fabrication

Advanced device fabrication concepts build on the advances resulting from work in other subareas. We are looking for contributions in areas such as novel device concepts; implementation of selective emitter structures; emitter wrap through, metallization wrap through and back contacted cell designs; advanced patterning techniques using lasers, screens and stencils, ink jets and other means; and others. Metallization is an area of particular interest in the PV community and contributions to this field are particularly invited.

Subarea 4.4: Modeling, Metrology, and Characterization

The last few years have seen a dramatic expansion in the diversity and power of metrology and characterization tools for c-Si materials and devices, and significant advances in the sophistication of device models. These will play a crucial role in further material and device improvements. Subarea 4.4 intends to highlight the state of the art in this field. Contributions are sought covering the range of topics related to modeling and metrology.

Subarea 4.5: Manufacturing

Subarea 4.5 includes both cell and module manufacturing. Important areas in which contributions are invited include but are not limited to: industrial equipment and processes; implementation and results of new cell processes in an industrial environment; manufacturing studies; wafering; waste process treatment; and module production.

Please check our website for the 35th IEEE PVSC at www.ieee-pvsc.org . Extended abstracts of 3 pages in length need to be submitted before the deadline on February 15, 2010, on the conference website.

Looking forward to see you all during an exciting and thought-provoking meeting in Honolulu, Hawaii.

Sincerely yours,

Klaus Weber, *Australian National University, Australia*
Area 4 Chair

Stefan Glunz, *Fraunhofer Institute for Solar Energy Systems, Germany*
Stuart Bowden, *Arizona State University, USA*
Area 4 International Co-Chairs

