

Special Issue

High-Efficiency Crystalline Silicon Solar Cells

Message from the Guest Editors

Photovoltaic solar energy provides humankind with a valuable instrument to develop a sustainable, globally prosperous, and environmentally friendly society. High-efficiency cell structures help to reduce the costs of photovoltaic energy generation in two ways: (i) by increasing the efficiency—the power output per area of used silicon; (ii) by allowing the use of thinner wafers, achieving the same level or even improved efficiency. However, four important aspects are associated with high-efficiency crystalline silicon solar cells: the surface passivation, metal contacts, material quality and cell structure. This Special Issue looks for participations in the high-efficiency crystalline silicon solar cells under enhanced scientific and multidisciplinary knowledge to improve performance and deployment for PV energy security. Topics of interest include but are not limited to:

- Silicon heterojunction;
- Passivated emitter rear contact (PERC, PERT, PERT);
- Carrier selective contact;
- Poly-Si application to solar cells (TopCon, POLO, etc.);
- Interdigitated back contact (IBC);
- Hybrid back contact;
- Perovskite/silicon tandem;
- III-V/silicon tandem.

Guest Editors

Prof. Dr. Eun-Chel Cho

School of Information and Communication Engineering, Sungkyunkwan University, Suwon 16419, Korea

Prof. Dr. Hae-Seok Lee

Department of Energy Environment Policy and Technology, KU-KIST Green School, Graduate School of Korea University, Seoul 02841, Korea

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Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
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Energies is an international, open access journal in energy engineering and research. The journal publishes original papers, review articles, technical notes, and letters. Authors are encouraged to submit manuscripts which bridge the gaps between research, development and implementation. The journal provides a forum for information on research, innovation, and demonstration in the areas of energy conversion and conservation, the optimal use of energy resources, optimization of energy processes, mitigation of environmental pollutants, and sustainable energy systems.

Editor-in-Chief

Prof. Dr. Enrico Sciubba

Department of Mechanical and Industrial Engineering, University
Niccolò Cusano, 00166 Roma, Italy

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