

Special Issue

Self-Healing Polymeric Hetero-Nano-Structures for Monolithic Quantum Dot Perovskite Tandem Solar Cells

Message from the Guest Editors

Photovoltaic perovskite solar cells (PSCs) have been considered the most promising substitutes for high-caliber solar energy harvesting systems. For tandem solar cells, many narrow bandgap semiconductors, such as crystalline silicon (c-Si), Cu(In,Ga)Se, and polymers, are paired to increase efficiency beyond the present Shockley–Queisser limit ($>29.5\%$). Monolithic tandem solar cells are fabricated sequentially on a single substrate with one transparent front electrode and one opaque rear electrode interconnected with an interconnection layer (ICL). The parasitic absorption of indium tin oxide, indium-doped zinc oxide, or gold leads to the loss of short-circuit current density for tandem solar cells, and the sputtering process damages underlying functional layers, reducing the device's fill factor. Additionally, under frequent temperature variations, damaged or cracked solar cells reduce efficiency by deteriorating photon transfer tunneling. This Special Issue invites original and review articles that target self-healing solar cells, e.g., using smart polymeric layers, to overcome the above issues without curtailing efficiency in energy harvesting cells.

Guest Editors

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Deadline for manuscript submissions

closed (31 December 2022)



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Message from the Editor-in-Chief

Since its foundation in 2009, *Polymers* has developed into an internationally renowned, extremely successful open access journal. The editorial team and the editorial board dedicatedly combine open-access publishing and high-quality rigorous peer reviewing. The performance of the journal has proven this strategy to be well-suited and highly successful. This is reflected in the increasing impact factor of *Polymers*, the most recent one being 4.7.

I would like to invite you to contribute to the success of the journal by sending us your high quality research papers. We would be pleased to welcome you as one of our authors.

Editor-in-Chief

Prof. Dr. Alexander Böker

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