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Special issue on recent progress in organic electronics and photonics

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Organic electronic and photonic devices have received tremendous attention from both academia and industry because of their great promise for practical use as organic light-emitting diodes (OLEDs), organic solar cells (OSCs), organic field-effect transistors (OFETs), and chemical and biological sensors. During the past decade, remarkable progress has been achieved in this cutting-edge research field, which has opened numerous opportunities for the fabrication of advanced organic electronic devices. For instance, solution-processable OSCs with a power conversion efficiency (PCE) exceeding 12% have been achieved, which meets the basic requirements for commercialization. Recently, active-matrix OLEDs that can be used in smart phones, televisions, and as flexible displays for portable devices have been commercialized.

The 2016 International Conference on the Science and Technology of Synthetic Metals (ICSM2016), the most famous conference in organic electronics and photonics, was successfully held in Guangzhou, China, from June 26, 2016 to July 1, 2016. Most of the above-mentioned achievements were contributed by attendees of ICSM2016. To highlight these achievements, we devote this special issue of *Science China Chemistry* to reporting recent progress in organic electronic and photonic devices. All authors in this issue were speakers at ICSM2016.

This issue includes two highlights, four reviews, and eleven articles. The two highlights comment on the latest record PCE of 12.7% achieved by tandem OSCs containing highly efficient small-molecule chromophores, and thick-film ternary OSCs with a PCE exceeding 11%. The four review articles summarize the recent progress of π-conjugated electron-accepting polymers composed of boron-nitrogen species, interconnecting layers for tandem OSCs, transition metal oxide hole-transport materials, and OFETs for bioelectronics applications. There are also five articles on new electron-donating materials for OSCs, along with individual articles on novel bipolar hosts for highly efficient phosphorescent OLEDs, the preparation of horizontally aligned single-walled carbon nanotubes, nanocomposites with enhanced photocatalytic efficiency under visible-light irradiation, high-resolution scanning optical imaging of a frozen planar polymer light-emitting electrochemical cell, OFETs based on C60 single crystals with a conjugated polyelectrolyte interlayer, and the charge transport properties of a bis-fused tetrathiafulvalene compound based on S···S and π-π stacking interaction.

We believe this special issue presents important references that will evoke research interest from a broad range of research scientists, engineers, and researchers working in related fields. We thank all the contributing authors and referees for their effort expended in organizing or peer-reviewing manuscripts. Finally, we acknowledge Dr. Xuemei Zhang and her colleagues from the editorial office of *Science China Chemistry* for handling manuscripts and organizing this issue.

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