

EDITORIAL

View Article Online

View Journal | View Issue

Fred Wudl. A giant in π -conjugated materialsQichun Zhang,^a Dmitrii F. Perepichka,^b Hong Meng^c and Yongsheng Chen^dCite this: *Mater. Chem. Front.*,
2020, 4, 3398

DOI: 10.1039/d0qm90051f

rsc.li/frontiers-materials

This themed issue of *Materials Chemistry Frontiers* is a tribute to Professor Fred Wudl, one of the pioneers of organic electronics, on the occasion of his 80th birthday. Wudl's contributions in the design of new π -conjugated molecules and materials have defined this field, through numerous milestone discoveries, ranging from small-molecules-based organic metals, ferromagnets and superconductors, to fullerene acceptors and low bandgap polymers. Fred's remarkable creativity and

perpetual scientific curiosity have received wide international recognition and led to many awards including the Arthur C. Cope Scholar Award, the Chemistry of Materials Award and the Tolman Medal from the American Chemical Society; the Wheland Medal from the University of Chicago; the Spiers Memorial Award and Stephanie L. Kwolek Award from the Royal Society of Chemistry; and Seaborg Medal from the University of California, Los Angeles.

Wudl's work continues to inspire many scientists to push the advance of materials chemistry. In this themed issue, you will find 24 reviews, communications and full articles covering the synthesis of new conjugated molecules and polymers, the study of structure-properties relationships, and applications in various devices including solar cells,

organic field-effect transistors (OFETs), organic light-emitting diodes (OLEDs) and sensors.

Many papers in this themed issue evolve from Fred's early work in materials chemistry and have been presented by many of his former coworkers and colleagues. The diversity of the presented contributions reflect that of Fred's own career. These include the review on azacenes by Zhang and Zhang (DOI: 10.1039/C9QM00656G), propellant-based electron acceptors by Zhang *et al.* (DOI: 10.1039/D0QM00279H), anthracene-based liquid crystals by Meng *et al.* (DOI: 10.1039/D0QM00305K), stable radicals by Zheng *et al.* (DOI: 10.1039/D0QM00122H), and polymers by Wei and Wang (DOI: 10.1039/D0QM00309C); and papers on conjugated polyelectrolytes by Nguyen *et al.* (DOI: 10.1039/D0QM00073F)

^a Department of Materials Science and Engineering,
City University of Hong Kong, Hong Kong, 999077, China

^b Department of Chemistry, McGill University, 801
Sherbrooke str West, Montreal H3A 0B8, QC, Canada

^c School of Advanced Materials, Peking University,
Shenzhen Graduate School, Shenzhen, 518055, China

^d Key Laboratory of Functional Polymer Materials of
Ministry of Education, College of Chemistry,
Nankai University, Tianjin, 300350, P. R. China



Qichun Zhang



Dmitrii F. Perepichka



Hong Meng



Yongsheng Chen



Fig. 1 Professor Fred Wudl at the International Symposium on Optoelectronics, Materials, and Energy (ISOME-2014) in Nanjing 2014, and the following social activities with his wife Dr Linda Wudl.

and by Chiechi *et al.* (DOI: 10.1039/D0QM00278J), pyridine/selenophene copolymers by Yang *et al.* (DOI: 10.1039/C9QM00739C), 2D perovskites by Dou *et al.* (DOI: 10.1039/D0QM00233J), chemical and biological sensors based on OFETs by Miao *et al.* (DOI: 10.1039/D0QM00202J), non-fullerene acceptor by Chen *et al.* (DOI: 10.1039/D0QM00287A), thermally activated delayed fluorescence (TADF) by Bryce, Monkman *et al.* (DOI: 10.1039/D0QM00429D), donor-acceptor co-crystals by Coropceanu, Brédas *et al.* (DOI: 10.

1039/D0QM00420K) and by Perepichka *et al.* (DOI: 10.1039/D0QM00500B), doping of organic and perovskite semiconductors by Chabynyc *et al.* (DOI: 10.1039/D0QM00442A), rylene diimides by Guldi, Prato *et al.* (DOI: 10.1039/D0QM00407C). One of these papers builds on Fred's famous isothianaphthene motif to create new n-type semiconductors and has been co-authored by Fred (DOI: 10.1039/D0QM00137F).

During the preparation of this themed issue, we received a hugely enthusiastic

response from researchers in the organic electronics community, which was not surprising given Fred's pioneering role in the field. We hope that you will enjoy reading through this issue.

Although Professor Wudl has now retired, he remains an active member of the scientific community (Fig. 1). His "what's the story?" (addressed daily to his students and post-docs) will be remembered for many years. Happy Birthday, Fred, and many more to come!