



Cite this: *J. Mater. Chem. C*, 2022, 10, 2311

Professor Daoben Zhu: a giant in organic solids in China

Qichun Zhang,^{*a} Wenping Hu,^{*b} Thuc-Quyen Nguyen,^{*c} Qibing Pei^{*d} and Jia Zhu^{*e}

DOI: 10.1039/d2tc90014a

rsc.li/materials-c

This themed issue of *Journal of Materials Chemistry C* is a tribute to one of the pioneers of organic solids in China, Professor Daoben Zhu, on the occasion of his 80th birthday. His remarkable advancements in organic solids range from small-molecule-based conductors/semiconductors (including C60-related materials), two-dimensional metal-organic-framework-based superconductors, organic ferromagnets, organic thermoelectric materials; to thin-film-related devices as well as

fundamental physics and potential applications. Professor Zhu's scientific creativity as well as his contribution to organic solids has not only inspired many Chinese young scientists to follow his steps and make this field prosperous in China, but also had a profound effect on global research. His remarkable achievements have received prestigious international recognition including the Lifetime Achievement Award of the Chinese Chemical Society (2021), Outstanding Science and Technology Achievement Prize of Chinese Academy of Sciences (2018), National Natural Science Second Prize five times (1988, 2002, 2004, 2007, 2014), Academician of the Chinese Academy of Sciences (1997), Honorary Member of the Korean Chemical Society (1999), Fellow of the Royal Society of Chemistry (2001), Fellow of the Asia Pacific Academy of Materials Science (2003), and Academician of the Third World Academy of

Sciences (now Academy of Sciences for Developing Countries) (2009).

Professor Zhu's research has surely motivated the younger generations and kindled their curiosity to continue pushing the advance of organic solids. As presented in this themed issue, it is our great honor to invite a number of Professor Zhu's former students, coworkers and friends to contribute to this themed issue and make it an exciting scientific read. You can find a range of reviews, perspectives, communications and full articles, which cover the design and preparation of new organic conjugated materials, the study of structure-property relationships and their potential applications in important devices including photovoltaics, organic spintronics, organic magnetics, organic thermoelectrics, organic memristors, organic transistors, organic optics, organic batteries, sensors, and bio-applications.

^a City University of Hong Kong, Hong Kong.

E-mail: qiczhang@cityu.edu.hk

^b Tianjin University, China. E-mail: huwp@tju.edu.cn

^c University of California, Santa Barbara, USA.

E-mail: quyen@chem.ucsb.edu

^d University of California, Los Angeles, USA.

E-mail: qpei@seas.ucla.edu

^e Beijing National Center for Nanoscience and Technology, Chinese Academy of Sciences, China.

E-mail: zhujia@nanoctr.cn



Qichun Zhang



Wenping Hu



Thuc-Quyen Nguyen

Much work in this themed issue has stemmed from or been inspired by Professor Zhu's research in organic materials and device applications. These include the perspective/reviews/articles/communications on organic transistors by Samori *et al.* (10.1039/D1TC05055A), by Sun *et al.* (10.1039/D1TC04384F), by Luscombe *et al.* (10.1039/D1TC05229B), by Zhang, Yu *et al.* (10.1039/D1TC02833B), by Deng, Geng *et al.* (10.1039/D1TC04207F), by Jia, Guo *et al.* (10.1039/D1TC04079K), by Yang, Li *et al.* (10.1039/D1TC04307B), by Zhang, Yamada *et al.* (10.1039/D1TC03547A), by Takimiya *et al.* (10.1039/D1TC04312A), by Leo *et al.* (10.1039/D1TC04230K), by Wang, Zhao, Zhang *et al.* (10.1039/D1TC04610A), by Li, Geng and Hu *et al.* (10.1039/D1TC02284A), by Huang, Facchetti, Marks *et al.* (10.1039/D1TC03156B), by Ren, Yu, Hu *et al.* (10.1039/D1TC05136A), and by Miao *et al.* (10.1039/D1TC02810C); the perspective/article on spintronics by Gu, Guo, Zhang, Zhu, Li, Zhang, Sun *et al.* (10.1039/D1TC04333A) and by Ding, Tian, Hu *et al.* (10.1039/D1TC04259A); the reviews/communication/articles on organic semiconductors by Zhang *et al.* (10.1039/D1TC04340D), Dong *et al.* (10.1039/D1TC04866J), by Dong and Li (10.1039/D1TC04598A), by Kamencek and Zojer (10.1039/D1TC04708F), by Ma *et al.* (10.1039/D1TC03133C), by Meng, Liu *et al.* (10.1039/D1TC03421A), by Zhang, Zhang *et al.* (10.1039/D1TC04291B), by Faul *et al.* (10.1039/D1TC04518K), by Zhang, Wang, Mori, Zhu *et al.* (10.1039/D1TC04305F), and by Huynh, De Feyter *et al.* (10.1039/D1TC03142B); the reviews/communications/articles on organic optical materials by Li *et al.* (10.1039/D1TC04163K), by

Zhang, Fan *et al.* (10.1039/D1TC04271H), by Sun, Yang, Zhang *et al.* (10.1039/D1TC04257B), by Yan, Zhao *et al.* (10.1039/D1TC02638K), by Gong *et al.* (10.1039/D1TC04278E), by Tong, Qu *et al.* (10.1039/D1TC03975J), by Liu *et al.* (10.1039/D1TC04100B), by Zhen, Dong, Hu *et al.* (10.1039/D1TC04330G), and by Zhu *et al.* (10.1039/D1TC04286F); the reviews/communications/articles on perovskite-based films/solar cells by Pang, Cui *et al.* (10.1039/D1TC04302A), by Qiao, Song *et al.* (10.1039/D1TC04101K), by Zhu, Li, Li *et al.* (10.1039/D1TC04176B) and by Ge, Gao *et al.* (10.1039/D1TC03942C); the reviews/communications/articles on organic solar cells by Zhang, Zhang *et al.* (10.1039/D1TC04224F), by Zhu *et al.* (10.1039/D1TC03954G), by Lu *et al.* (10.1039/D1TC04264E), by Deng, Zhao, Wei *et al.* (10.1039/D1TC04428A), by Liu, Bo *et al.* (10.1039/D1TC04425G), by Zuo, Chen *et al.* (10.1039/D1TC04222J), by Ma, Chen *et al.* (10.1039/D1TC03793E), and by Würthner *et al.* (10.1039/D1TC04116A); the article on sensors by Guo *et al.* (10.1039/D1TC04114B), by Liu, Tian *et al.* (10.1039/D1TC04335H); the article on bioapplications by Tang *et al.* (10.1039/D1TC03128G); the article on thermoelectrics by Zhao, Crispin *et al.* (10.1039/D1TC04466D); the article on memristors by Lei, Yu *et al.* (10.1039/D1TC04248C); the article on inorganic-organic hybrid conductors by Xu *et al.* (10.1039/D1TC03614A); the article on organic batteries by Wang *et al.* (10.1039/D1TC03709A); the perspective on surface adhesion engineering for devices by Wang *et al.* (10.1039/D1TC05966A); and the article on organic capacitors by Guo, Liu, Jia *et al.* (10.1039/D1TC04406K).

Beyond scientific research, Professor Zhu has been actively involved in many social service duties within the Chinese chemistry community to support emerging and rising chemists, including in the role of Vice-President of the National Natural Science Foundation of China (2000–2007), Advisor of the National Natural Science Foundation of China (2008–2012), Dean of the College of Chemistry and Chemical Engineering, the Graduate University of Chinese Academy of Sciences (2004–2013), Director of the Institute of Chemistry (1992–2000), and more. Moreover, Professor Zhu has also made a great contribution to establish many international connections and cooperation with the Chinese chemistry community to support research in China. Fig. 1 showcases two such activities with delegates from the United Kingdom in 2005 (top) and Japan in 2019 (bottom). Furthermore, he also served as an Editorial Board Member/Advisory Board Member of several international journals including *Applied Physics A*, *Chemistry-An Asian Journal*, *Macromolecular Rapid Communications*, *Polymer Reviews* and *Molecular Physics Reports*. In addition, he was a member of the International Advisory Committee of the Institute of Molecular Functional Materials in the University of Hong Kong, as well as Distinguished Visiting Professor at Hong Kong Baptist University and Adjunct Professor of Tsinghua University, Peking University, Fudan University, Wuhan University, and East China University of Science and Technology Shanghai.

During the process of putting together this themed issue, we received overwhelming enthusiasm from many researchers in the organic solids community, in recognition of Professor Zhu's tremendous contribution to the field and/or in appreciation of his mentorship. We are grateful to the colleagues and friends for sharing their research and insights in this exciting themed issue. We also deeply appreciate the support of the editorial team of *Journal of Materials Chemistry C*.

Finally, we would like to use a Chinese poem (written by Dr Yanqiu Sun) to express our lofty respect to Professor Zhu and wish him all of the best.



Qibing Pei



Jia Zhu

致敬朱先生
 朱阁青山高仰止，
 道漫溯源为君始。
 本志不求名与利，
 桃李天下散新知。

Salute to Professor Zhu (English Translation)
 Admiration for Professor Zhu's noble
 character as high as mountains,
 Appreciation for leadership of the
 Chinese organic solids,

Not for fame or wealth,
 But to nurture students and knowl-
 edge all over the world.
 Happy Birthday, Professor Zhu!



Fig. 1 Professor Daoben Zhu gave a speech at the UK–China Science Forum (top) and conducted social activities at the China–Japan joint symposium (bottom).