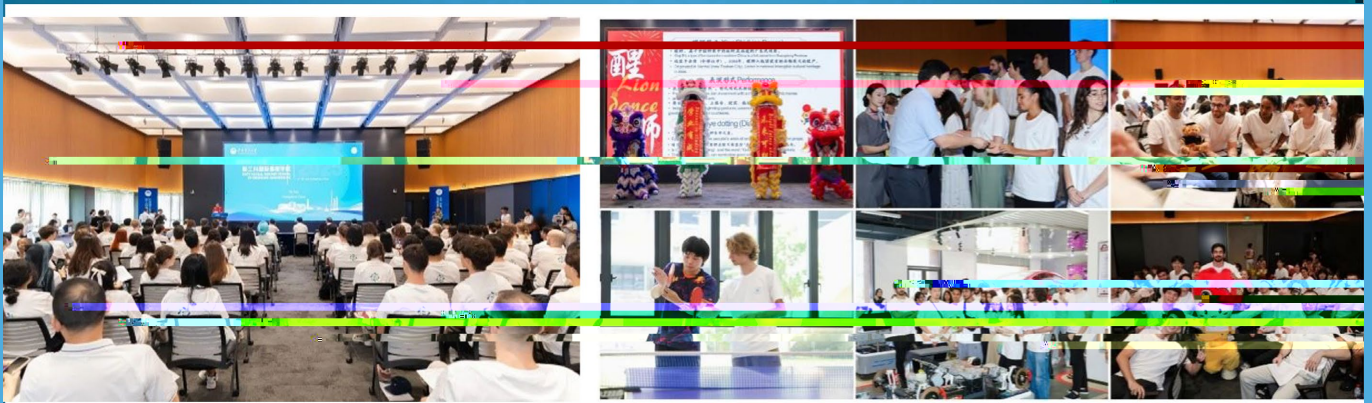




SOUTH CHINA UNIVERSITY
OF TECHNOLOGY



From July 6 to 19, South China University of Technology (SCUT) holds the Second Global Summer School of Emerging Engineering at its Guangzhou International Campus. This year's program saw a more than 50% increase in participation compared to the previous year, attracting 120 international students from 25 world-renowned universities, including the University of Cambridge, Imperial College London, Ghent University, Université Paris Cité, and the University of California, Irvine, along with 16

faculty members from partner institutions.

The program comprised three main components: academic courses, cultural courses and visits, and a corporate mobile classroom. The academic sessions were jointly delivered by faculty members from SCUT and its partner universities. The cultural courses and visits allowed students to experience the brilliance of traditional Chinese culture, particularly Lingnan culture. The corporate mobile classroom presented a vivid and technologically advanced modern China.

6 -19

50%

25

120

16



On July 12, Nobel Prize in Chemistry laureate, Fellow of the Royal Netherlands Academy of Arts and Sciences, Foreign Member of the Chinese Academy of Sciences, and professor at the University of Groningen, Ben L. Feringa, visited South China University of Technology (SCUT) for the first time.

12
Feringa

Ben L.

SCUT President Tang Hongwu met with Professor Feringa and conferred upon him the title of Honorary Professor. During the forum, Professor Feringa delivered an academic report titled "The Art of Building Small", which focused on his team's groundbreaking research in molecular motors. He elaborated on the design and synthesis of artificial molecular motors and their applications in smart materials and light-responsive systems. The event attracted over 200 faculty and students from various

A research team led by Professor Wang Jun at South China University of Technology (SCUT) has published a paper titled "Engineering Multi-Specific Nano-Antibodies for Cancer Immunotherapy" in *Nature Biomedical Engineering*, reporting important research progress in the field of cancer immunotherapy. By developing multi-specific nano-antibodies and promoting their clinical translation and application, the team has provided new technological pathways and innovative concepts for the field.

"Engineering Multi-specific Nano-antibodies for Cancer Immunotherapy" *Nature Biomedical Engineering* 展, 通

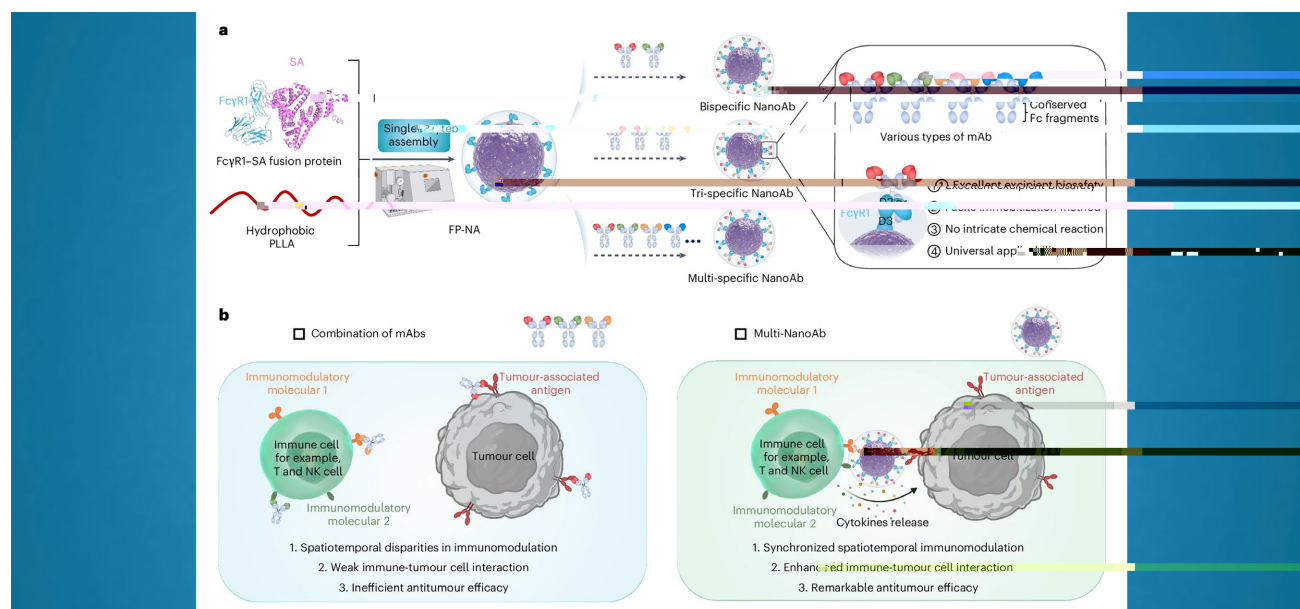


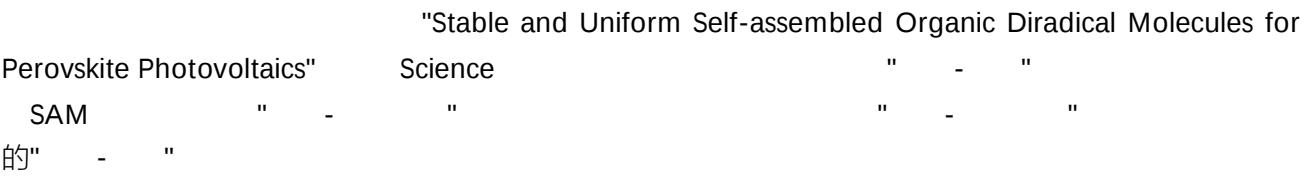
Figure 1: Schematic illustrating the design of FP-NA and multi-NanoAb with the potential to improve mAb-based cancer immunotherapy.

The team updated the "nano-adaptor" technology in the research. Using genetic engineering techniques, they constructed a recombinant fusion protein composed of an Fc receptor and serum albumin. This fusion protein was then controllably assembled with the biomedical polymer polylactic acid in a "one-step" method, resulting in the successful fabrication of a Fusion Protein-polymer

Composite "Nano-Adaptor" (FP-NA). This multi-specific nano-antibody significantly enhances the ability of immune cells, such as T cells and macrophages, to recognize and eliminate tumor cells. The team has completed the scaled-up trial production and key technology validation of the "nano-adaptor," which is expected to overcome the limitations of conventional production technologies, advance the development of new antibody drugs, and open new avenues for treating cancers and other diseases.



A collaborative research team led by Professor Li Yuan from South China University of Technology (SCUT), in partnership with the Changchun Institute of Applied Chemistry of the Chinese Academy of Sciences, the University of Science and Technology of China, and LONGi Green Energy Technology Co., Ltd., has published a paper in Science titled "Stable and Uniform Self-assembled Organic Diradical Molecules for Perovskite Photovoltaics." This study disclosed the open-shell "quinoid-diradical" electron spin ground state of the "donor-acceptor" self-assembled monolayer (SAM) material and elucidated the "structure-property" relationship between molecular conductivity and their "open-shell-diradical" electronic spin ground state.



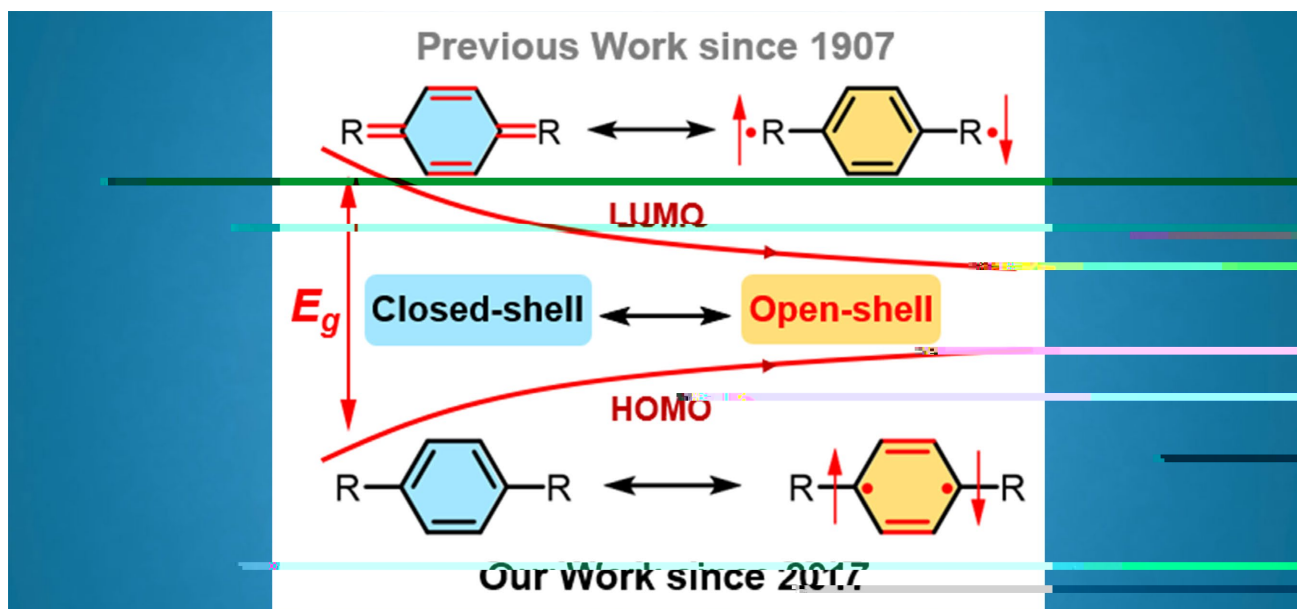


Figure 1 The Chichibabin radical since 1907 and the "quinoid-diradical" proposed by Li Yuan's team in 2017

1 1907 Chichibabin 2017 -

In 2017, Professor Li Yuan's team published a paper titled "A Review on the Origin of Synthetic Metal Radical: Singlet Open-shell Radical Ground State?" in *The Journal of Physical Chemistry C* the American Chemical Society (Fig. 1: J. Phys. Chem. C 2017, 121, 15, 8579-8588), in which Professor Yuan Li boldly and imaginatively reviewed the "closed-shell-singlet ground state" of classic "donor-acceptor" organic semiconductors. The current research findings further validate the open-shell "quinoid-diradical" electron spin ground state and the "aggregation-induced radical" mechanism initially proposed by Yuan Li's team in 2017. This work provides an example of industry-academia-research collaboration in the application of "donor-acceptor" diradical materials and demonstrates the application potential of organic "donor-acceptor" diradicals.

2017	<i>Journal of Physical Chemistry C</i>	"A Review on the Origin of
Synthetic Metal Radical: Singlet Open-shell Radical Ground State?"		1 J. Phys. Chem. C
2017, 121, 15, 8579-8588	" - "	" - "
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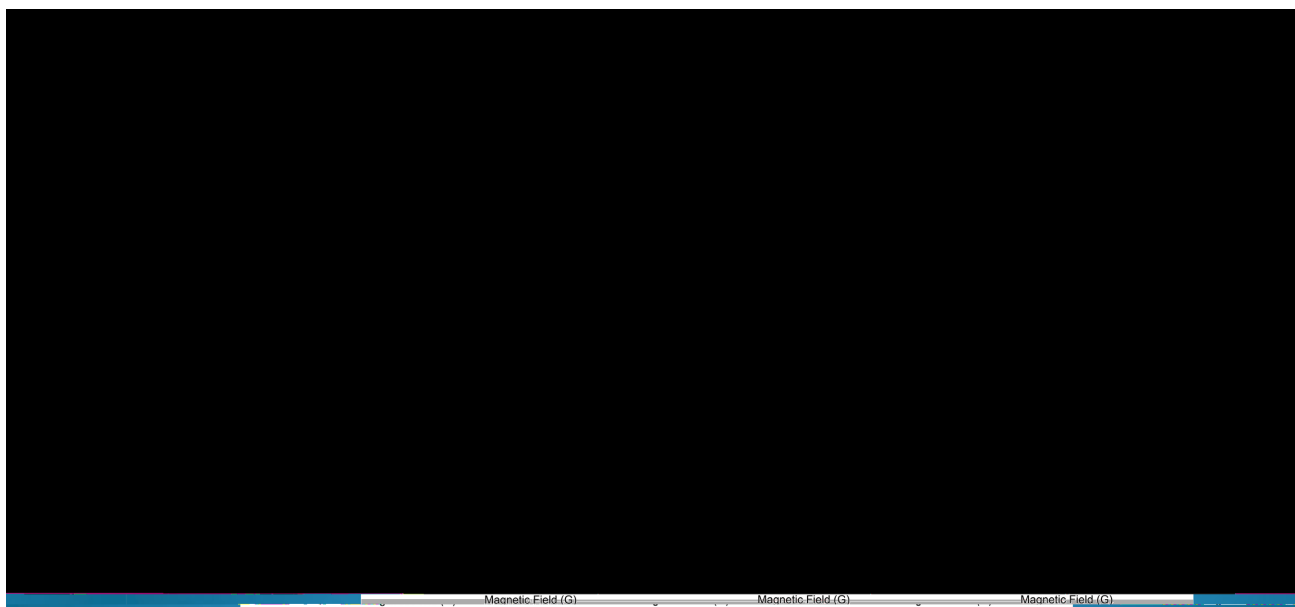


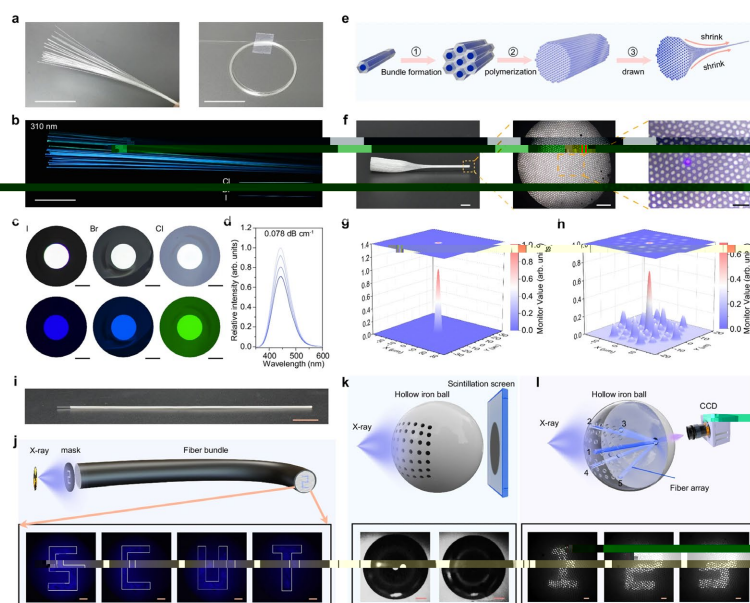
Figure 2. Design strategy for the "donor-acceptor" diradical self-assembled molecules and their corresponding electron spin resonance spectra.

2 -

A team led by Professor Dong Guoping from South China University of Technology (SCUT) has published a paper titled "Integrated Copper-halide Activated Scintillator Fiber Array for Remote High Resolution X-ray Imaging" in Nature Communications. The team developed a novel scintillating fiber array by incorporating nanocrystals into glass fibers. Through precise control of the crystallization process, they fabricated low-loss fibers and subsequently produced a fiber array with 1600 pixels using a secondary drawing method. This fiber array detector can penetrate complex structures, enabling low-dose (22 nGyair s-1), high-resolution (48 lp mm-1) X-ray imaging and image transmission.

"Integrated Copper-halide Activated Scintillator Fiber Array for Remote High Resolution X-ray Imaging" Nature Communications

1600
s-1 (48 lp mm-1) X 22 nGyair



Cs₃Cu₂X₅ NC glass fiber arrays for remote pixel-point imaging

This research not only successfully demonstrated the exceptional performance of the novel scintillating fiber array in a laboratory environment but also paved the way for its future mass production and broad application. This scintillating fiber array integrated with halide nanocrystals is expected to become a new tool in key areas such as precision radiation therapy, brain activity monitoring, and industrial 3D X-ray computed tomography, providing strong impetus for the innovation of high-resolution X-ray imaging technology.

X

X

On September 11th, Clarivate Analytics released the latest statistical data from the Essential Science Indicators (ESI) database. Microbiology at South China University of Technology (SCUT) has entered the global top 1% in ESI rankings for the first time. Currently, SCUT's global overall ranking stands at 139th, rising 29 places compared with the same period in 2024.

9 11

Essential Science Indicators

ESI

ESI

1

139

29

Total: 19	Research Fields	Web of Science Documents	Cites	Cites/Paper	Top Papers	Total: 599	Institutions	Countries/Regions	Web of Science Documents	Cites	Cites/Paper
10	MOLECULAR BIOLOGY & GENETICS	733	14,774	20.16		137	AARHUS UNIVERSITY	DENMARK	61,114	1,637,161	26.79
11	BIOSCIENCES	607	11,195	18.44		138	MEMORIAL SEWAN KETTERING CANCER CENTER	USA	28,217	1,621,841	57.48
12	ECONOMICS & BUSINESS	610	10,070	16.52		139	SOUTH CHINA UNIVERSITY OF TECHNOLOGY	CHINA MAINLAND	66,405	1,061,098	24.93
13	PHARMACOLOGY & TOXICOLOGY	653	10,314	15.79		140	UNIVERSITY OF BIRMINGHAM	ENGLAND	60,417	1,600,158	26.49
14	SOCIAL SCIENCES, GENERAL	767	9,739	12.70		141	LEIBNIZ ASSOCIATION	GERMANY (FED REP GER)	60,417	1,600,158	26.49
15	MATHEMATICS	1,218	9,191	7.55		142	UNIVERSITY OF ITALY	ITALY	60,334	1,599,430	26.56
16	IMMUNOLOGY	325	5,781	17.79		143	UNIVERSITY OF HELSINKI	FINLAND	55,121	1,589,059	28.83
17	MICROBIOLOGY	304	5,696	18.74		144	LEIDEN UNIVERSITY	NETHERLANDS	50,063	1,583,515	31.53
18	PLANT & ANIMAL SCIENCE	292	4,076	13.96							

ESI is an analytical tool for evaluating scientific research performance and tracking trends in science. Disciplines ranked within the top 1% are considered high-performing, the top 1% are outstanding, and the top 0.01% are leading. SCUT currently has a total of 18 disciplines ranked among the global top 1% in ESI, including five in the top 1%, and two in the top 0.01%.

ESI

18

ESI

5

ESI

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ESI

Produced by: International Office, SCUT

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Issue Date: October 2025

