

CONNECTION

The Official Newsletter of Zhejiang University

Issue 6

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*Seeking Truth
Pursuing Innovation*

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MESSAGE FROM THE EDITOR-IN-CHIEF

A warm welcome back from the summer break! We kickstart the new academic year with the 6th issue of *Connection*. The past few months have been extremely eventful and fruitful. From the induction of Professor YAO Ke into the Academia Ophthalmologica Internationalis to the Gold Prize attained by the Wenqin Chorus, there have been many proud moments for the University. Also the summer sees a growing number of international students to ZJU for a variety of learning opportunities and cultural adventures.

I am also pleased to inform you that the team behind *Connection* has recently expanded. With fresh perspectives and new hands on deck, we look forward to sharing the most exciting news of ZJU through vivid pictures and quality articles.

I hope you get as much joy from reading these pages as we had in preparing them for you.

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ZJU NEWSROOM

INTERNATIONAL

ZJU's PIEGL team makes it to top 5 in SCBFLC 2018

On June 29, the "Mon Then Lads" team, consisting of 4 students from ZJU's Master Program in Innovation, Entrepreneurship and Global Leadership (PIEGL), made it to the top 5 in the 2018 Siam Commercial Bank Future Leader Competition (SCBFLC), Thailand's first business case competition for master's degree students. The competition attracted 203 teams from 24 countries, and the 12 teams that entered the semi-final include Shooting Stars from the National University of Singapore, Apostles from the University of Cambridge, Powered by FEP from the University of Porto and Go & Win from Peking University.

Journal of Urban Management enters ESCI

The Journal of Urban Management (JUM), co-launched by ZJU's School of Public Affairs and the Chinese Association of Urban Management, has been indexed in the Emerging Sources Citation Index (ESCI), which is a new database launched in 2015 and managed by Clarivate Analytics. This selection marks a significant milestone for JUM.

ZJU shines at the United Nations

During the month of August, 34 students took part in the United Nations Summer School held at the International Training Centre of the International Labour Organization in Turin, Italy. Two students, Ian Chew, an undergraduate student from the School of Medicine and FANG Yuan'an, a graduate student from the School of International Studies won the inaugural Global Youth Leadership Academy Award for their outstanding performance during the program.

In line with this year's theme of "Developing the next generation of global leadership", participants were introduced to the Sustainable Development Goals through various lectures and workshops. Additionally, participants also got the opportunity to go on study visits to various United Nations organizations, including the Palace of Nations in Geneva, Switzerland.





Wenqin Chorus wins gold prize in the 1st Tokyo International Choir Competition

ZJU's Wenqin Chorus clinched the coveted gold prize in the 1st Tokyo International Choir Competition.

Held during July 25-29 this year, the competition aims to popularize and promote choral music. Wenqin Chorus performed spectacularly when competing with 13 world-class choruses in the Youth Choir category.

What's happening

- A delegation from the University of Macau visited ZJU on June 11 and the two institutions signed a comprehensive strategic cooperation agreement in the field of life sciences.
- On June 14, ZJU signed an MoU with the University of Paris-Saclay to promote cooperation in faculty & student exchange and double degree and joint research programs in various fields.
- Party Secretary ZOU Xiaodong visited universities in Germany and Austria to deepen exchanges and promote strategic cooperation on August 6-10. During the visit, ZJU signed an agreement with the University of Munich on strategic cooperation, and co-established a seed fund to support collaborative work.

Scientists discover novel features of heavy-fermion superconductors

A research team headed by Prof. YUAN Qihui at the Center for Correlated Matter and the Department of Physics gave further evidence for fully gapped superconductivity. The findings are published in the May 22 issue of *PNAS*. The research is jointly carried out by ZJU, Rice University, the Max Planck Institute for Chemical Physics of Solids and the University of Augsburg.

Parasitic insect-derived miRNAs could be a natural way to control pest

The research team led by CHEN Xuexin, a professor with the College of Agriculture and Biotechnology, published a paper entitled "Parasitic insect-derived miRNAs modulate host development" in the June 6 issue of *Nature Communications*. It reveals the underlying mechanisms for the modulation of parasitic-derived miRNAs, which opens up new theoretical dimensions to the research and development of pest control. endoparasitoids produce miRNAs with roles in altering host growth. Other miRNAs may also have roles in regulating host metabolism and immune responses.

This is the first line of evidence demonstrating the molecular mechanisms by which parasitoid wasps control host development via miRNA. Their findings indicate that endoparasitoids produce miRNAs with roles in altering host growth. Other miRNAs may also have roles in regulating host metabolism and immune responses.

"Exhaust gas" converted into polymers with high added value

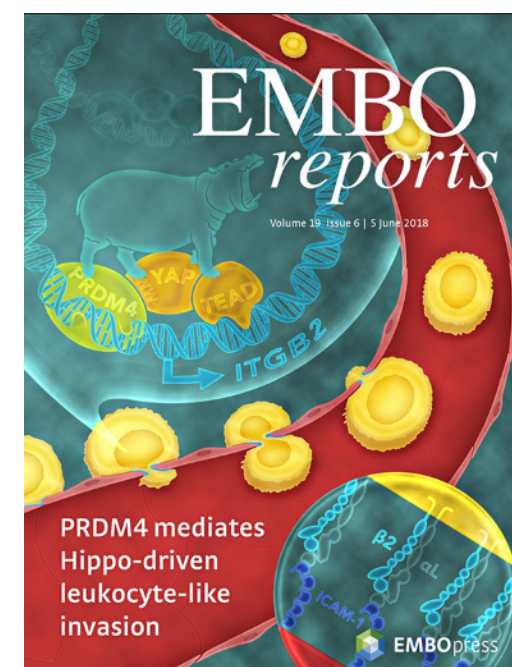
The research team led by ZHANG Xinghong, a professor in the Department of Polymer Science and Engineering, synthesized sulfur-containing

polymers via cooperative dual organocatalysts with high activity. Published in the May 30 issue of *Nature Communications*, the findings provide a precise structure to commercially available Lewis pairs for metal-free synthesis of sulfur-containing polymer.

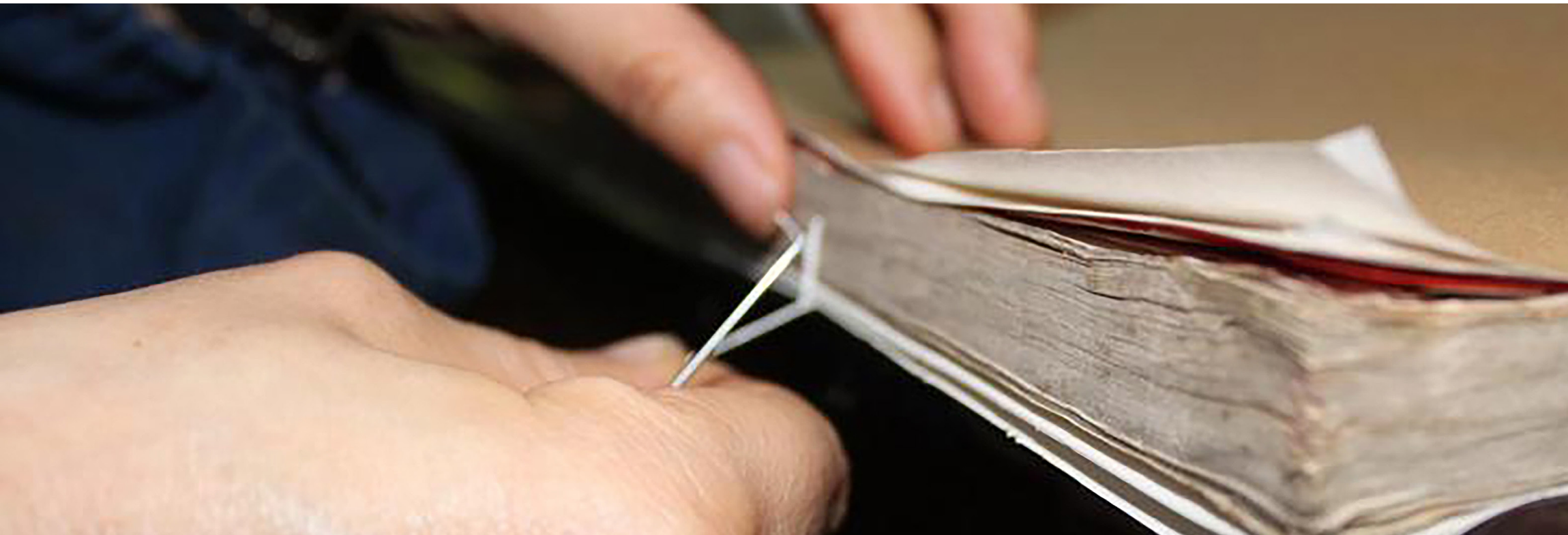
EMBO reports cover paper by ZJU biologists

The laboratory headed by ZHAO Bin with the Life Sciences Institute and Innovation Center for Cell Signaling Network published a cover article entitled "PRDM4 mediates YAP-induced cell invasion by activating leukocyte-specific integrinb2 expression" in *EMBO Reports* in June 2018.

Their findings demonstrate that Yes-associated (YAP) protein promotes cell invasion by inducing leukocyte-specific integrin expression, and PR/SET domain 4 (PRDM4) is identified as a novel transcription factor for YAP targets.



RESEARCH



Broken shuttle may hinder learning in patients with intellectual disability

Led by Dr. MA Huan, a research team involving ZJU School of Medicine and NYU School of Medicine suggested that a broken γ CaMKII shuttle protein may hinder learning in patients with intellectual disability, schizophrenia and autism. The findings are published in the June 22, 2018 online issue of *Nature Communications*.

Specifically, the research team found that mice engineered to lack the gene for the γ CaMKII shuttle protein took longer time than normal ones to finish simple memory tasks. This is the first study that shows the critical role of γ CaMKII in learning and memory for live animals.

History at fingertips: University holds event on preservation of ancient books

Co-organized by ZJU Library and the National Ancient Book Preservation Center of Zhejiang Library, "Ancient Book Preservation on Campus", an event to celebrate this year's Chinese Cultural Heritage Day, was held recently at ZJU's Basic Branch Library.

While showing the ancient technique of wood block printing and sharing preservation skills of ancient books, the activity tutor invited students to experience the delicate work and encouraged them to care about the future of cultural relics.

ZJU's National Health Big Data Institute launched

On June 30, ZJU's National Health Big Data Institute was officially set up in cooperation with the Chinese Health Information and Big Data Association.

The newly established institute is committed to smart processing, information mining and industrial applications regarding complicated healthcare data. It aims at supporting public health, clinical practices and policy-making, and cultivating cross-disciplinary talent in the domain of healthcare. To this end, it will create a sharing public technology platform for data management, data integration, data mining and artificial intelligence.

IN THE MEDIA

The Tiny Robots Fulfilling China's Big Soccer Dreams

After three years of failing to secure victory, China beat the U.S. in an astonishing 4-0 final. No, this is not a fantasy dreamed up by optimistic Chinese soccer fans — it's what really happened at RoboCup 2018, an international robot soccer competition held in Montreal last week.

A team of 10 students and eight robots from Zhejiang University (ZJU) in eastern China's Hangzhou won the small-size league this year, a competition for wheeled robots under 15 centimeters tall.

"This year, we were more advanced [than other teams]," team captain Huang Zheyuan told Sixth Tone. Huang, a master's student at the university's College of Science and Engineering, said that the team improved the robots' ball control with enhanced hardware, while software upgrades helped to hone their passing skills. (Sixth Tone)

China EconTalk: Fintech becomes a booster of RMB internationalization

Professor BEN Shenglin, the dean of Zhejiang University's Academy of Internet Finance, talked about the world's two largest economies working together rather than escalating trade tensions.

Some experts said that the trade tensions may accelerate renminbi's internationalization, unwittingly. And Ben prefers fintech rather than trade uncertainty to be the booster of RMB internationalization.

Since China is the dominant player in the fintech sector, the booming of fintech could let the locals in other countries open RMB account, then transact in the low costs and in an efficient way, according to Ben.

"That actually creates an additional market in terms of using RMB for local usages by the local people, which would help the RMB internationalization," Ben explained. (CGTN)



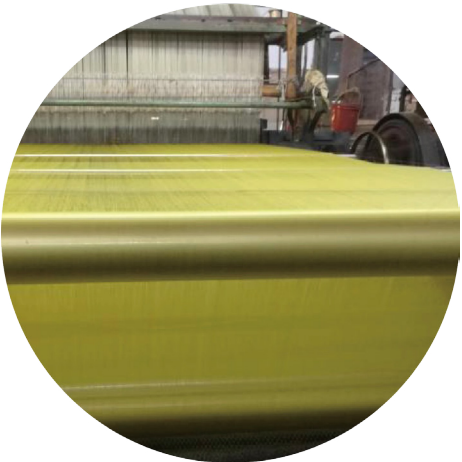
RESEARCH HIGHLIGHTS

China's first strain of colorful silkworm cocoon to be "mass-produced"

The research team led by Prof. CHEN Yuyin from ZJU's College of Animal Sciences has cultivated China's first strain of colorful silkworm cocoon—"Golden Autumn & Rising Sun" with over 10 years' breeding. This practical strain had made its debut recently.

IMPLICATION

Marked by its evenly large size, high output and satin texture, this strain of natural colorful cocoon "is blessed with a variety of exceptional traits for containing multiple functional agents, such as carotenoids and flavonoids", introduced by CHEN Yuyin, "its defining features—naturalness, wholesomeness and eco-friendliness—cater for the currents of modern consumption".





Researchers discover new direction for ultrasonic control over neural activity

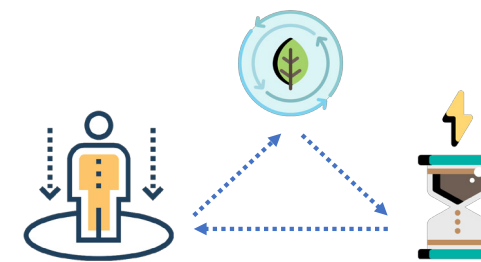
A research team led by LI Yuezhou from ZJU's School of Medicine collaborated with the team headed by ZHENG Hairong from CAS's Shenzhen Institute of Advanced Technology in research into ultrasonic control over neural activity.

They reported in the June 19 issue of *Nano Letters* mechanosensitive channel of large conductance (MscL) in rat hippocampal neurons in a primary culture and revealed that it can be activated by low-pressure ultrasound pulses. Since MscL is open to tension in the lipid bilayer, requiring no other proteins or ligands, it could be developed into a general noninvasive sonogenetic tool to manipulate the activities of neurons or other cells and potential nanodevices.

IMPLICATION

This research opens up a new orientation for the application of ultrasonic control in neural studies and lays a foundation for the further development of genetic ultrasound.

Robert Desimone, the Doris and Don Berkey Professor of Neuroscience at MIT, commented on this research as follows, "the results of YE Jia *et al.* with ultrasound look extremely promising, and I am sure they will stimulate more research to test the use of ultrasound in many neural applications, both basic and clinical."



Human body motion propels a high-output triboelectric nanogenerator on paper

The expeditious development of portable electronic devices benefits enormously from renewable and environmentally-friendly batteries. It's urgently required to develop more electrical energy that is efficient, clean and sustainable.

Characterized by its minimalist structure, small volume, low costs and super abilities to harvest energy from human kinetic energy, a novel X-shaped paper-based triboelectric nanogenerator (XP-TENG) was developed by the research team led by Dr. ZHU Zhiyuan from ZJU's Ocean College. The findings are published in the journal of *Nano Energy*.

IMPLICATION

Capable of providing two working patterns, the ingenious XP-TENG can yield an expanded scope of practical applications. A stacked XP-TENG aims at increasing the output performance while a fabricated XP-TENG can be used for harvesting mechanical energy from human walking. In addition, the XP-TENG can adapt to a humid environment and has the potential for working in the marine ambience.

SPOTLIGHT ON: STUDENTS



International students enjoy eye-opening experience at ZJU

On June 16, more than 40 students from 12 countries & regions arrived at ZJU for the 7th "Idea Explorer" Innovation & Entrepreneurship Global Summer Camp. Organized by ZJU's School of Management, the program offers fully immersive experience of traditional Chinese culture and innovation & entrepreneurship in Hangzhou.

Different from their own university experiences, ZJU presented to the participants a new possibility of campus life with its enormous size, diverse student activities and great support for start-ups.

During the three-week time, students were not only given academic lectures, but also encouraged to learn from real business settings through company visits, networking events with entrepreneurs and group work on their own business initiatives.

"The most interesting part of this specific program is all about China. How this amazing growth miracle happens. How they do business, what they think, how this relates all the way back to Confucianism," said Chrisjan Wust of Stellenbosch University in Cape Town.

"This is what the School of Management hoped for when it developed the program", said ZHOU Weihua, associate dean of the School, "We hope the program will help the participants to develop entrepreneurial skills and make connections with potential business partners from all over the world, and learn more about the Chinese culture."

Launched by the School of Software Technology, Zhejiang University International Education-Research-Industry Program (ZIERIP) is open to master and PhD students from top universities in the world. This year's program started in late June and attracted students from Stanford University, National University of Singapore and Imperial College London.

ZIERIP integrates academic and cultural training at ZJU with a 10-week internship at top tech companies in China. The first two weeks of the program are mostly lecture-based, covering a wide range of topics, such as artificial intelligence, cloud computing, the Internet of Things, blockchain and other edgy technologies. "It's a good mix of culture, company exposure, and lectures on different computer science topics. Very diverse...really relevant," said Mya, a master's student in math and science engineering at Stanford.

Notably, the program introduces a "partner project": student volunteers from the School of Software Technology accompany the foreign students during the first two weeks to help them better engage in the activities on campus.

"They join us in almost all the activities. We get to learn about the culture, how the School is structured, what their specializations and their research topics are. Sometimes we even talk about potential collaborations," said a master's student from NUS School of Computing.

It is the first time that the University has developed such program with its partner companies. Alibaba Group, the world's largest retailer, attracts and amazes the international students, thus becomes the main destination of their internship.



Education-Research-Industry Program attracts top students from across the world



"Before I came here, I knew it was a big company, not only in China but also (it was) very popular and prestigious worldwide, so I think it would be a good opportunity for me to both see the culture of China and work in this big internet company," said Theodoulos Rodosthenous, a PhD student in statistics at Imperial College London, who stepped on the land of Asia for the first time in his life.

These interns are required to be highly involved in the projects. Theodoulos, for example, has to perform a variety of tasks from developing scalable Graph Embedding techniques in JAVA and Apache Flink for streaming data to optimizing algorithms to reduce computational complexity on big data. Another intern, Vivian, is currently in charge of adding Q-learning and implementing reinforcement learning techniques into the traffic signal control algorithm.

"I would definitely recommend the program to anybody who's interested in it," said Vivian from Stanford, "this is a really enjoyable learning experience. When you come here, you really get to learn a lot of things, because it's highly likely that whatever department you get into, it may probably be very different from something you've been doing at school."

YU Liang, Vivian's supervisor at Alibaba, gave very positive feedback on her performance. "Her work will definitely benefit us in the long term," said YU. "Our team has always wanted to start optimizing the traffic signal control system. And since Vivian has the background of civil engineering and continuous interest for this area, we allow her to take the lead and let her surprise us."



On June 16, Prof. YAO Ke from the Eye Center of the Second Affiliated Hospital of ZJU's School of Medicine was elected a member of the Academia Ophthalmologica Internationalis (AOI) during the 36th World Ophthalmology Congress. Membership of AOI is regarded as the highest honor in ophthalmology, with only 80 seats available to 240,000 ophthalmologists.

YAO seemed a likely winner. With 364 academic papers, he led all candidates. He had completed over 40,000 surgeries, the largest number of all contenders. With regards to lens induced by stem cells and femtosecond laser-assisted cataract surgeries, YAO's results were exceptional. Finally, YAO had created China's first automotive ophthalmic mobile hospital, completing 11,415 free cataract surgeries and, in the process, establishing nine cataract surgical centers for restoring vision in central and western China.

He was widely noticed by international ophthalmology when attending the International Ophthalmology Conference in 2003, right in the place where he had studied - Switzerland. In a 30-minute keynote lecture, YAO explained his new glaucoma operation, combined with cataract surgery: non-penetrating glaucoma surgery combined with phacoemulsification. Greeted with thunderous applause, YAO was undoubtedly a star on the rise.

More than an ophthalmologist, a doctor and a researcher, he is the supervisor of more than 200 doctoral and master students, who represent the nation's most promising prospects in ophthalmology. Just as he said, "the future of China's ophthalmology belongs to young people and we must guide them well."



FACULTY

YAO Ke: Keeping his eyes on the real prize

