

# Tsinghua Newsletter

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The 3rd Belt and Road Davos Forum held in Davos, Switzerland, during the World Economic Forum



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The world's largest concrete 3D printed pedestrian bridge

# The 3rd Belt and Road Davos Forum held in Davos, Switzerland, during the World Economic Forum

Tsinghua University co-initiated the Belt and Road Davos Forum with the International Cooperation Center of the National Development and Reform Commission (ICC-NDRC) in 2017. This year, the Forum was co-hosted by Tsinghua, ICC-NDRC, the United Nations Industrial Development Organization (UNIDO), and the United Nations Institute for Training and Research (UNITAR), with the support from Commerce and Economic Development Bureau, The Government of the Hong Kong Special Administrative Region, the co-organizer.

More than 130 people from 23 countries and four international organizations attended the forum, of which 50% were representatives of the business community. The guests commented that the “Belt and Road Initiative” has significantly promoted interconnection and cooperation among the relevant countries, providing precious opportunities for more countries to achieve win-win cooperation. The influence of the Belt and Road Davos Forum in the international community has been significantly improved. Mrs. Carrie Lam, Chief Executive of Hong Kong SAR, attended the Forum and delivered opening remarks. Panel speakers included Ms. Olga Algayerova, Under-Secretary-General &

Executive Secretary, United Nations Economic Commission for Europe; Mr. Luhut B. Pandjaita, Coordinating Minister for Maritime Affairs of Indonesia; Mr. Rosen Plevneliev, former President of the Republic of Bulgaria; Mr. Djoomart Otorbaev, former Prime Minister of the Kyrgyz Republic; Mr. Zlatko Lagumdžija, former Prime Minister of Bosnia & Herzegovina; Mr. Grzegorz W. Kolodko, former Deputy Prime Minister and Minister of Finance of Poland; Mr. Darell Leiking, Minister of Ministry of International Trade and Industry of Malaysia; Mr. Ibrahim Al-Omar, Governor of the Saudi Arabian Investment Authority; Mr. Soopakij Chearavanont, Chairman of the Board of Directors at Charoen Pokphand Group Company Limited; Mr. Tadashi Maeda, CEO of Japan Bank for International; and Mr. Chui Sai Peng Jose, CEO of Parafuturo de Macau Investment and Development Limited.

President Qiu Yong delivered opening remarks on behalf of Tsinghua University, highlighting the significance of building transnational dialogues and gathering consensus, which was also the spotlight of the 3rd Belt and Road Davos Forum. As President Qiu pointed out, the world today is facing a period of major changes never seen in a century, with profound adjustments when mankind is now embracing a new era. “A just cause should be pursued for the common good”. The “Belt and Road Initiative” reflects Chinese vision and wisdom in understanding the world and the willingness to share the benefits of economic development with global partners. “I sincerely hope that our distinguished guests from near and afar will actively participate in the discussion today. I’m also confident that the Belt and Road Davos Forum will become a feast where our ideas and wisdoms can be shared,” said President Qiu.

Ms. Olga Algayerova, Under-Secretary-General & Executive Secretary of United Nations Economic Commission for Europe (UNECE) commented that the Chinese government for their commitment to align the Belt and Road initiative to the 2030 agenda is the basis for the cooperation between the United Nations economic commission in Europe, and national





development and reform commission in promoting public-private partnerships for successful sustainable development goals.

Mr. Rosen Plevneliev, President of the Republic of Bulgaria 2012 – 2017, shared his point of view on free trade and win-win cooperation on the Belt and Road Initiative. He said “The Belt and Road initiative was a dream, it was a vision. And now from day one to today, five years on, we have traveled such an amazing way together and we can see so many pragmatic results coming in on the table.”

Mr. Zhao Kejin, Professor of Tsinghua University gave some clarification on the Belt and Road initiative. He said it is fundamentally a platform for development and for economic issues. Mentioning global criticism on the initiative, Professor Zhao said we should follow the principle of the high quality of development.

Mr. Tadashi Maeda, CEO of Japan Bank for International Cooperation, mentioned that both Japan and China are the two big economies in Asia. He also put forward some principles for cooperation in the Belt and Road initiative, which include transparency, inclusiveness, and the rule of the law.

Yang Bin, Vice President of

Tsinghua University and Executive Dean of the Institute of Global Development, hosted the special closed-door seminar of the Forum. Zhu Min, Chair of the National Institute of Financial Research at Tsinghua University, held the opening ceremony of the Forum. Xue Lan, Dean of the Schwarzman College at Tsinghua University; Pan Qingzhong, Executive Vice Dean of the Schwarzman College, and Tian Wei, the moderator of CGTN, respectively hosted the three panel discussions.



This year’s Belt and Road Davos Forum was hosted with the support of Institute for Global Development at Tsinghua University and the Tsinghua Alumni Association of Switzerland.

The following is the full text of President Qiu’s speech at the 3rd Belt and Road Davos Forum:

***To Embrace the New Era Together***

As we usher in 2019, in the snowy

town of Davos, we gather here to chart the future course of global development and the Belt and Road initiative. Founded by Tsinghua University and International Cooperation Center of National Development and Reform Commission of China in 2017, “The Belt and Road Davos Forum” is held for the third time with more participants and ever-increasing influence. This year, we are honored to co-host the forum with the United Nations Industrial Development Organization and United Nations Institute for Training and Research. We would also like to express our sincere appreciation to the Government of the Hong Kong Special Administrative Region for co-organizing this event. On behalf of Tsinghua University, I would like to extend my warmest welcome to the distinguished guests and experts.

The world today is facing a period of major changes never seen in a century with profound adjustments. We are embracing a new era. Driven by the Fourth Industrial Revolution, the world economy will undergo a shift from traditional drivers of growth to new ones, which will trigger adjustments of the global political and economic system, shaping and defining the future of the world at the fundamental level, and will have a far-reaching impact on each country and region.

This year, the theme of the forum is “Building the Belt and Road-Sharing the Benefits of the Economic Globalization”. “As a Chinese saying goes, a just cause should be pursued for the common good.” In Chinese, 大道之行也，天下為公。 The “Belt and Road Initiative” reflects Chinese vision and wisdom in understanding the world and the willingness to share the benefits of economic development with global partners. Here I would like to share with you some of Tsinghua’s recent progress in this regard. On October 9th last year,

we held the ground-breaking ceremony of Tsinghua Southeast Asia Center in Bali island, Indonesia. It will serve the needs of Indonesia and Southeast Asian countries in terms of human capital training in the face of the fourth industrial revolution, and contribute to the Belt and Road initiative and UN SDGs. On December 6th last year, we launched the Tsinghua University Latin America Center in Santiago, Chile. The center will be a base for talent cultivation and promote exchange and cooperation

between Latin America and China.

Looking ahead, we are confident we can cope with the changes brought forth by globalization 4.0. Tsinghua University has embarked on a new journey of becoming more open, more innovative and more international. Yesterday, Tsinghua University hosted a session on climate change at Davos. Eight leading global universities participated and signed a joint statement to work on plans for a Global Alliance of Universities on Climate. The alliance will facilitate

greater levels of collaboration on climate issues and the promotion of environmental practices by universities.

I sincerely hope that our distinguished guests from near and afar will actively participate in the discussion today. I'm also confident that the Belt and Road Davos Forum will become a feast where our ideas and wisdoms can be shared.

# Global Universities Unite to Accelerate Action on Climate



Davos – 23rd Jan, 2019 – eight global universities have expressed their shared commitment to combat climate change. A joint statement, made in Davos at the World Economic Forum, represents a commitment to establish the Global Alliance of Universities on Climate (GAUC). Among its key objectives, GAUC will facilitate greater levels of collaboration on

climate issues, greater engagement with climate stakeholders, and the promotion of environmental practices by universities, in line with United Nations conventions on climate change and Sustainable Development Goals.

GAUC – the first university grouping of its kind – is made of: Australian National University;

University of California, Berkeley; University of Cambridge; Imperial College London; London School of Economics and Political Science; Massachusetts Institute of Technology; University of Tokyo, and Tsinghua University, with the intention of including more universities in the coming years.

“This initiative is welcomed by the World Economic Forum. Through this grouping, universities will mobilize their resources, research and scientific findings, and increase their ability to disseminate knowledge and build consensus throughout the world,” said a WEF spokesperson.

“The historic commitment that we are exploring today is a pivotal step to making an even greater collective impact. We believe leading universities should play a leading role in shouldering the responsibility to tackle the most challenging issues confronted by humankind. The Global Alliance of Universities on Climate will be a unifier of higher education grassroots climate action to encourage universities around the world to address climate change as a core part of their mission.” said Qiu Yong, President of Tsinghua University.

The official joint statement issued by GAUC is below.

### *Joint Statement on the Co-Founding of Global Alliance of Universities on Climate*

Global climate change endangers lives and livelihoods across the world and the ecological security of the earth's species, including humans. Cooperation in tackling climate change has fostered broad-ranging agreements, including at the UNFCCC COP21 in Paris in 2015, and concerted grassroots action around the world. Universities shoulder an increasingly important role. Underpinning the critical nature of this role is the capacity of universities to generate actionable scientific and technological research, inform policy development and implementation, disseminate knowledge and culture, cultivate leaders of the future and build understanding among people from all walks of life. Strong action is urgently needed; it must be international, well-founded analytically and evidence-based.

These universities, meeting at Davos, January 2019, are working on plans for a Global Alliance of Universities on Climate (GAUC) as a mechanism for exchange and cooperation, specifically to lead efforts from global higher education to examine the technical, social, psychological, institutional and economic issues of climate change and how practical action can be implemented.

As universities of global impact, GAUC members are committed to the initiation and support of actions which are required to respond to this global challenge. Joint actions could include but are not limited to:

1. Encourage universities around the world to address climate change as a core part of their mission;
2. Advance global understanding and commitments on climate action through greater engagement with climate stakeholders;
3. Strengthen cooperative links that promote research, policy

development and implementation, technological innovation and public awareness on climate issues;

4. Strengthen cooperation on climate change in the creation of relevant knowledge and skills, including the development of related training and education programs;

5. Advocate and support low net-GHG emissions campus practices, and promote the adoption of world-leading environment practices by universities around the world consistent with the Sustainable Development Goals;

6. Develop fora designed to share knowledge and promote key GAUC objectives.

The progress of the plans for the co-founding of the GAUC reflects the shared understanding achieved

between the co-founding university leaders, professors and key faculty members from climate-related disciplines. The co-founding members have jointly issued this statement on 23 January 2019, and express their shared commitment to address one of the greatest challenges facing humankind.

*Australian National University  
University of California, Berkeley  
University of Cambridge  
Imperial College London  
London School of Economics and Political Science  
Massachusetts Institute of Technology  
University of Tokyo  
Tsinghua University*

# President Qiu Yong leads a Delegation to visit the International Telecommunication Union and the University of Geneva

On January 21st, Tsinghua University President Qiu Yong led a delegation to visit the International Telecommunication Union (ITU) and the University of Geneva (UNIGE). At the ITU, President Qiu held talks with Secretary-General Zhao Houlin and signed a Memorandum of Understanding. At the UNIGE, President



Qiu attended the second Geneva Tri-  
logue: Scaling Education for the SDGs  
and the GTI Advisory Board meeting.

At the ITU headquarters, President Qiu held talks with Secretary-General Zhao Houlin, reviewing and looking forward to the exchanges and cooperation between the two sides. President Qiu expressed the hope that both sides would take the signing of the MOU on cooperation as an opportunity to further deepen their long-term cooperative relationship, to carry out more extensive cooperation in the fields of professional exchanges, student internships, joint scientific research and personnel training, and to jointly produce professional journals to promote international academic exchanges on telecommunications. Vice President Yang Bin introduced Tsinghua University's global strategy and the achievements of international cooperation in recent years. Zhao Houlin noted that since it became one of the first academic members of the ITU in 2011, Tsinghua University has been strongly supporting the ITU's research and innovation work in the fields of digital broadcasting and radio communications. On the basis of the memorandum of understanding between the two sides, the cooperation will be further developed. He said the ITU also expects more students from Tsinghua to have internships in the organization.

On the same day, President Qiu also visited the Biotech campus of the UNIGE to attend and address the second Geneva Tri-  
logue: Scaling Education for the SDGs, an event jointly organized by the UNIGE, the United Nations Institute for Training and Research (UNITAR) and XuetangX, focusing on how to promote SDG education through mass education. In his speech, President Qiu noted that since the signing of the Memorandum of Understanding between Tsinghua University and the University of Geneva in 2017, the two universities have established a solid partnership in education and research on sustainable development. He hoped that the two sides would continue to strengthen cooperation in personnel training and joint research to build a win-win community and contribute to the building of a shared future for mankind.



Following the trilogue, President Qiu participated in the Geneva-Tsinghua Initiative Advisory Board meeting. Also attending the meeting

were Yves Fluckiger, Rector of the UNIGE, Nikhil Seth, United Nations Assistant Secretary-General and Executive Director of the UNITAR, Irina Bokova, former Director-General of the United Nations Educational, Scientific and Cultural Organization (UNESCO), and Francois Taddei, Professor of the Paris Descartes University in France, and other members of the Advisory Board Committee.

President Qiu thanked the members in the committee for their support for the research and teaching cooperation between the two universities to achieve the UN's sustainable development goals. He also introduced the cooperation between the two universities in the field of sustainable development in 2018 and the results achieved. In order to further promote practical cooperation, President Qiu and the members focused on discussing and adjusting the working mode of the Advisory Board Committee. Vice President and Provost Yang Bin of Tsinghua University, Vice - Rector Stephane Berthet of the University of Geneva, and Zhu Xufeng, Associate Dean of the School of Public Policy and Management of Tsinghua University were added to the Advisory Board Committee. The presidents of the two universities will serve as ex officio members of the Advisory Board Committee to promote SDG education.



# Tsinghua Research Achievements win 24 State Science and Technology Awards

24 Tsinghua research achievements recently were recognized at the 2018 State Science and Technology Awards. Tsinghua professors accepted the awards on January 8th at the annual National Science-Technology Award Ceremony in the Great Hall of the People in Beijing.

Academician Liu Yongtan, Tsinghua alumnus and expert in radar technology and signal processing, won the 2018 State Pre-eminent Science and Technology Award. Of Tsinghua's awards, five were State Natural Science Awards, three were State Technological Invention Awards, and sixteen were State Scientific and Technological Progress Awards. Altogether 15 research achievements were completed by

Tsinghua as the lead research institution, ranking first among universities in China. Tsinghua received a record total number of awards and first prizes.

By the end of 2018, Tsinghua had won a total of 571 State Science

and Technology Awards, including one State Preeminent Science and Technology Award, 76 State Natural Science Awards, 153 State Technological Invention Awards, and 341 State Scientific and Technological Progress Awards.



## The world's largest concrete 3D printed pedestrian bridge



On January 12, 2019, the world's largest concrete 3D printed pedestrian bridge was completed in the Wisdom Bay Industrial Park, Baoshan District, Shanghai. The project was designed

and developed by the team of Professor Xu Weiguo from Tsinghua University (School of Architecture) - Zoina Land Joint Research Center for Digital Architecture, and was

jointly built with Shanghai Wisdom Bay Investment Management Company.

The length of the pedestrian bridge is 26.3 meters and the width is 3.6 meters. The bridge's structure is inspired by the ancient Anji Bridge in Zhaoxian, China. It adopts the structure of a single arch to bear the load, and the distance between the abutments is 14.4 meters. Before the bridge's printing process, a 1:4 scale physical model was built to carry out the structure failure testing, which proved the bridge's strength can meet the load requirements of holding pedestrians crowding over the whole bridge.

The printing of the bridge uses the 3D printing concrete system independently developed by Professor Xu Weiguo's team. The system is integrated with innovative technologies such as digital architectural design, printing path generation, operation

control system, printing tools, concrete material, etc. It has the characteristics of high printing efficiency, high molding precision and high constancy in prolonged work. There are three main innovation points of the system, taking the leading position in this field internationally. The first is the printing tool of the robot arm, which avoids plugging in extrusion process and collapse during the material's layer stacking; for the print path generation and operating system, it integrates form design, print path generation, material pumping, printing tool's movement, robot arm movement and other systems to work together; the third is a unique printing material formula, which has reasonable performance and stable rheology.



All of the concrete components of this bridge are printed with two robotic arm 3D printing systems in 450 hours. Compared with conventional bridge of similar size, its cost is only two-thirds of the latter one; This is mainly because that the printing and construction of the bridge's main body did not use any templates or reinforcing bars, saving costs significantly.

The design of the pedestrian bridge adopts three-dimensional solid modeling. The bridge handrails are shaped like flowing ribbons on the arch, forming a light and elegant posture lying on the pond of Shanghai Wisdom Bay. The pavements of the bridge are generated from the form of brain corals, and white pebbles are filled in the voids of the pattern.

The pedestrian bridge consists

of three parts: the arch structure, the handrails and the pavements. The bridge structure contains 44 hollow-out 3D printed concrete units in the size of 0.9\*0.9\*1.6 meters; the handrails and pavements are also divided into 68 and 64 units for printing respectively. The printing materials of these components are all composite materials composed of polyethylene fiber concrete with various admixtures. After repeated ratio tests and printing experiments, it has controllable rheology to meet printing requirements; the pressure resistance strength of the new concrete material reaches 65 MPa and the flexural strength reaches 15MPa.

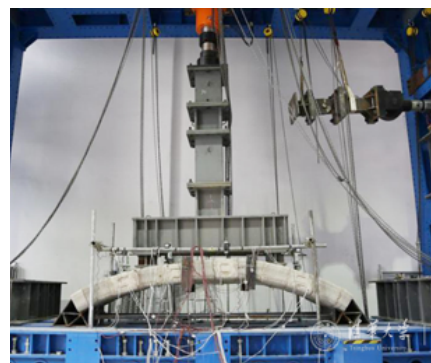


The bridge is embedded with a real-time monitoring system, including vibrating wire stress sensors and a high-precision strain monitoring system, which can collect the force and deformation data of the bridge in real time. They will have a practical effect on tracking the performance of new concrete materials and the structural mechanical properties of printing components.



With the disappearance of China's demographic dividend, the

demand for labor in construction projects will be increasingly deficient. Intelligent construction will be an important channel to solve this problem. It will promote the transformation and upgrading of China's construction industry. As an important part of intelligent construction, 3D printing will play an important role in the intelligent development of engineering construction.



Although there are many bottlenecks that need to be solved in 3D printing concrete construction, competition in research and practical application of this field is becoming increasingly fierce. There are quite a few research institutions and construction companies in the world that have been committed to technical research in this area, but these technologies have not been used in actual engineering. The completion of the pedestrian bridge marks a gratifying step for this technology from research and development to practical engineering applications. At the same time, it marks the entry of China's 3D concrete printing and construction technology into the world's advanced level.

(From the School of Architecture)



# Center for Quantum Information at Tsinghua University demonstrates Binomial Bosonic Quantum Error Correction Code

system consisting of a superconducting qubit and a bosonic microwave cavity. Quantum information is encoded on superpositions of photon Fock states in the cavity with carefully chosen binomial coefficients, which can correct single photon losses, the dominant error channel of this system. This QEC scheme benefits from the infinite dimensional Hilbert space of the cavity for redundant information encoding without increasing the number of error channels, thus greatly reducing the hardware requirement.

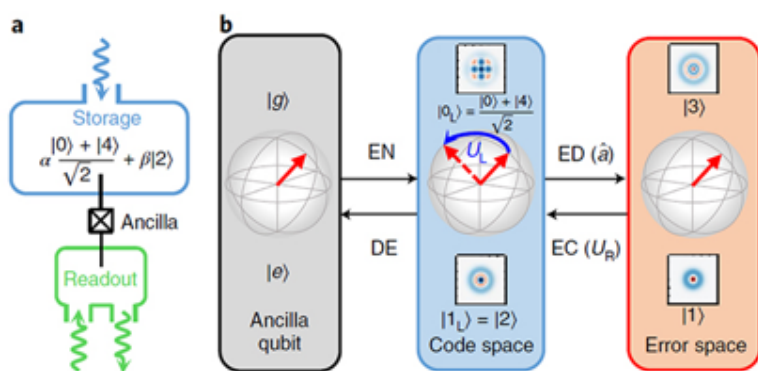


Figure 1: Schematic of the binomial bosonic QEC code.

By using a fast real-time feedback control technique, the group demonstrates repetitive QEC approaching the break-even point for error correction and achieves full control on a single logical qubit with a high-fidelity (97% average process fidelity) universal quantum gate set. The group also demonstrates a Ramsey experiment on the corrected logical qubit with a coherence time improvement by a factor of two. These results pave the way towards fault-tolerant QEC and gate operations based on bosonic encodings.

In collaboration with the University of Science and Technology of China and Yale University, the Center for Quantum Information (CQI) at Tsinghua University demonstrates for the first time both the binomial bosonic quantum error correction (QEC) code and universal gate set operations on a single logical qubit. This work was recently published online in Nature Physics, s41567-018-0414-3.

quantum information, QEC against unwanted errors is necessary and has long been considered as the holy grail of fault-tolerant quantum computing. Different from the challenging standard QEC schemes based on multiple physical qubits, the group at CQI of Tsinghua University uses a hybrid

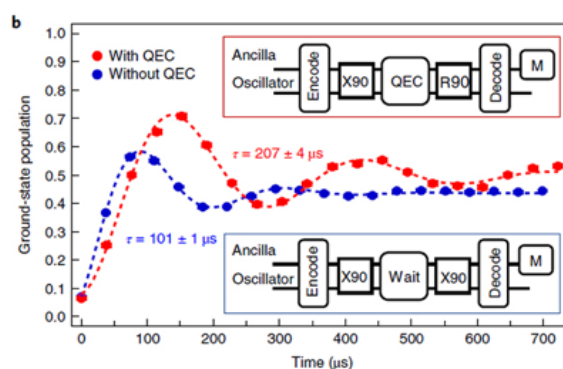
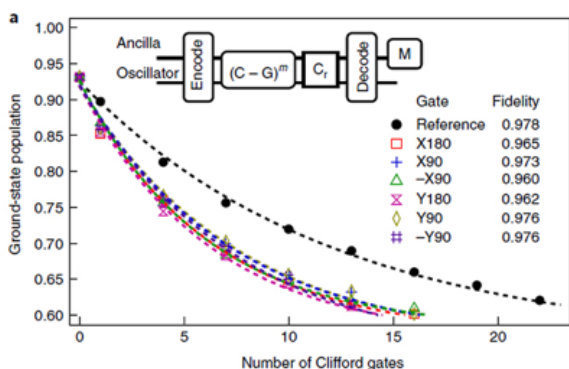
The first authors of this paper are IIIS PhD candidates Ling Hu and Yuwei Ma. Luyan Sun, IIIS Associate Professor, and Changling Zou, Associate Researcher at USTC, are the correspondence authors.

Due to the fragile nature of

## Publication link:

**Nat. Phys. s41567-018-0414-3 (2019)**

<https://www.nature.com/articles/s41567-018-0414-3>



# Atomically dispersed catalyst obtained with solution synthesis at ultra-low temperatures

Prof. Hui Wu group (School of Materials Science and Engineering, Tsinghua University), in collaboration with Prof. Xiaoyuan Zhang group (School of Environment, Tsinghua University), Li-Min Liu group (School of Physics, Beihang University) and Binghui Ge (Institute of Physical Science and Information Technology, Anhui University) recently published a paper entitled “ $-60^{\circ}\text{C}$  solution synthesis of atomically dispersed cobalt electrocatalyst with superior performance” on Nature Communication (2019) 10:606. In this research, they pushed the temperature of numerous solution synthesis to a record-low temperature of  $-60^{\circ}\text{C}$ , and they demonstrated that atomically dispersed Co, Fe, Ag and Pt catalysts can be synthesized in solution without adding stabilizer or surfactant at such low temperatures, as illustrated in Figure 1.

The facile synthesis of single atom catalysts (SACs) or atomically dispersed catalysts have attracted more and more attention. Wet-chemistry methods have been applied to synthesize metal SACs, and one significant challenge is to avoid the aggregation of atoms in solution

synthesis to form nuclei and nanoparticles. According to the nucleation theory, the nuclei formation and growth represent the first stages undertaken by the products species, stepping over an energy barrier to aggregate as precipitates. An interesting and important question we considered is how different the products will be when solution reactions run at lower and lower temperatures.

Several novel features are shown in this work:

1. Thermodynamic and kinetic control to obtain atomically dispersed catalysts in solution. By using a water/alcohol mixed solvent system to provide a low freezing-point of the reaction system, they successfully conducted a series of solution syntheses at an ultralow temperature of  $-60^{\circ}\text{C}$ . Taking advantages of a significant higher energy barrier and sluggish nucleation rate at such low temperatures, the stable atomically dispersed metals in solution without nuclei formation was achieved. The low temperature synthesis provided a general and fundamental strategy to synthesis single atom catalysts.

2. Superior performance for ORR electrocatalysis. Single atom Co

catalysts on nitrogen-doped mesoporous carbon (NMC) substrates can be synthesized at  $-60^{\circ}\text{C}$ , and such materials presented superior catalytic activities and stabilities in both alkaline and neutral electrolytes, superior to the state-of-the-art commercial platinum/carbon catalyst and other previously reported non-precious catalysts. The onset potential and half-wave potential values of our Co catalysts were 62 mV and 39 mV, more positive than that of Pt/C catalyst in alkaline electrolyte.

3. Superior performance in full fuel cell devices. They further applied the atomically dispersed Co catalysts in practical microbial fuel cells (MFCs) devices, as shown in Figure 2. The cell outputs a maximum power density of  $2550 \pm 60 \text{ mW m}^{-2}$ , with no current drop operated for 820 h. The MFCs with atomically dispersed Co catalysts air-cathodes can treat wastewater and simultaneously generate high electric power. The novel low-temperature solution synthesis not only provide a new generalized method to redesign reaction kinetics and thermodynamics by controlling the nuclei formation and growth behavior in wet chemistry process,

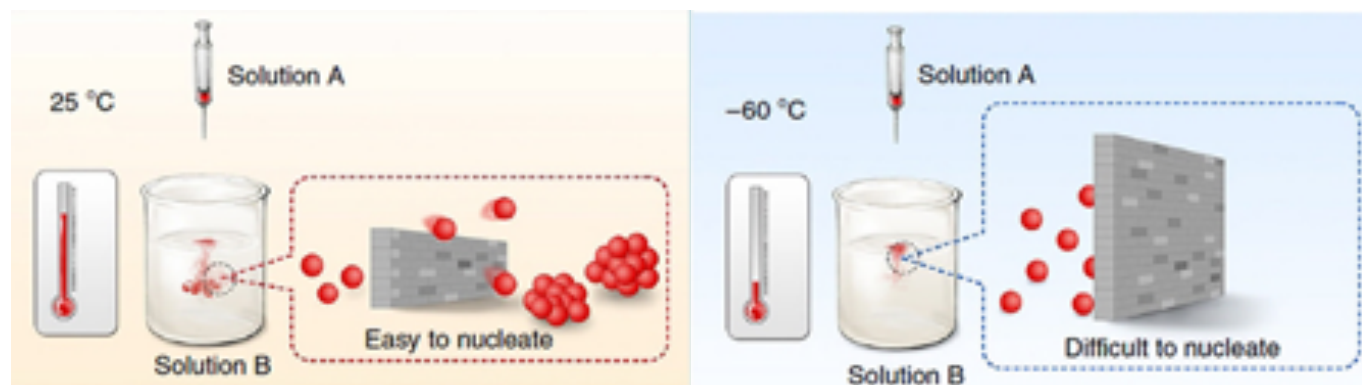


Figure 1 Schematic diagram of nucleation regulation in solution synthesis at  $-60^{\circ}\text{C}$  and room temperature

but also open up new possibilities for the nucleation understanding in solution reactions and the fabrication of high-performance catalyst materials using conventional solution chemical method.

Prof. Hui Wu group in the School of Materials Science and Engineering, Tsinghua University, has long engaged in the large-scale preparations of low-dimensional functional nanomaterials and their applications. Prof. Xiaoyuan Zhang's group in the School of Environment, Tsinghua University, has long engaged in water and wastewater treatment, energy and resource recovery from wastewater. Prof. Hui Wu, Li-Min Liu, Xiaoyuan Zhang and Binghui Ge are the corresponding authors, Dr. Kai Huang, Le Zhang and Ting Xu are the co-first authors. This research is funded by National Science Foundation, National Basic Research and Postdoctoral Science Foundation, and can be viewed by <https://www.nature.com/articles/s41467-019-08484-8>

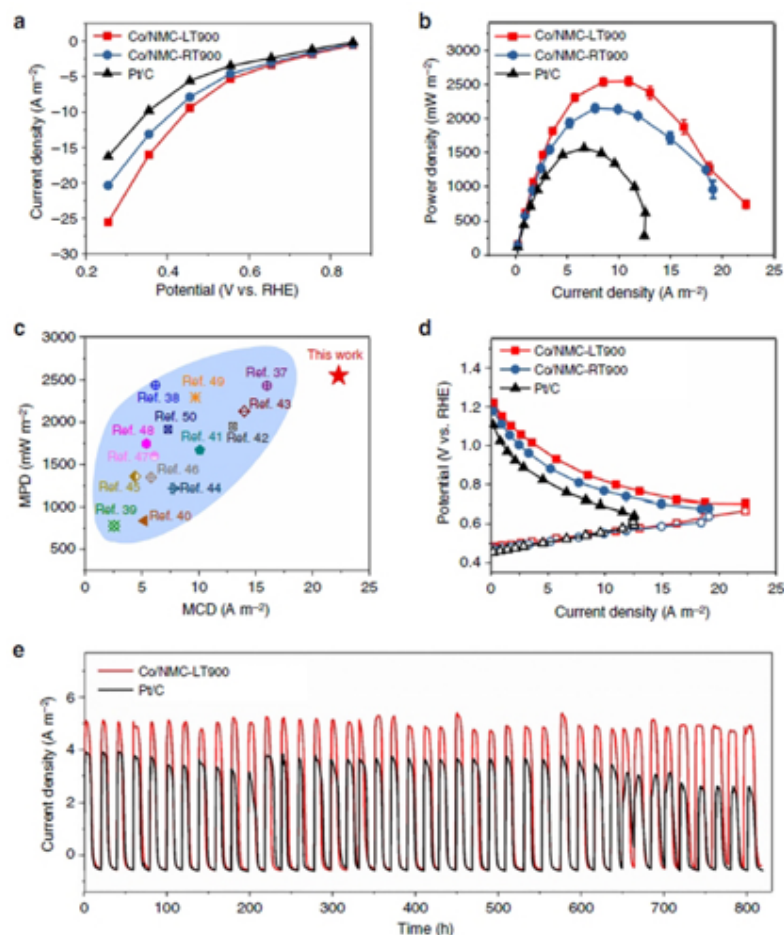


Figure 2 Microbial fuel cell performance of atomically dispersed metal catalysts

## Outstanding Students Honored at 2018 Tsinghua Scholarship Awards Ceremony



On the afternoon of January 3rd, the Tsinghua University Student Award Conference 2018 was held in the main building. Vice President and Provost Yang Bin, and Deputy Secretary of the CPC Tsinghua University Committee Xiang Botao attended the meeting.

In the academic year 2017-2018, 10 undergraduates and 10 postgraduates of Tsinghua University received the Tsinghua Top Grade Scholarships, 50 students received the Jiang Nanxiang Scholarships, and 49 students received the December Ninth Scholarships.

## Tsinghua Professor Cao Liangcai and Alumnus Pan Shilong elected Fellows at the International Society for Optical Engineering (SPIE)

Recently the International Society for Optical Engineering (SPIE) published the list of Fellows newly elected in 2019. On the list were 88 scientists from all over the world. Prof. Cao Liangcai, an Associate Professor of Tsinghua University's Department of Precision Instrument, and Prof. Pan, Shilong, a Tsinghua alumnus from the class of 2000 and a Professor of the Nanjing University of Aeronautics and Astronautics, were on the list.

The International Society for Optical Engineering (SPIE) is one of the most renowned international academic organizations that is centered on the domains of optics and photonics. The selection process for its Fellowship is very rigorous.

Only members of distinction who have made significant scientific and technical contributions in the multidisciplinary fields of optics, photonics, and imaging can receive a Fellowship. More than 1,400 SPIE members have become Fellows since the Society's inception in 1955. This

year, there are also three Laureates of the 2018 Nobel Physics Prize among the elected Fellows: Dr. Arthur Ashkin, an American scientist; Prof. Gérard Mourou, a French scientist, and Prof. Donna Strickland, a Canadian scientist.



## Yang Bin visits the Czech Republic to develop China-Czech Cooperation on Education



From January 18th to 19th, Yang Bin, Vice President and Provost of Tsinghua University, visited Charles University in Prague, the Czech Technical University and the Chinese International School of Prague and held talks with H.E. Mr. Zhang Jianmin, China's Ambassador Extraordinary and Plenipotentiary to the Czech Republic, to develop exchanges and cooperation between Tsinghua University and educational institutions in Central Europe.

Charles University, founded in 1348, is one of the oldest universities in Central Europe. During the talks with Prof. MU Dr. Jan Skrha, DrSc., Vice-Rector for International Affairs and Mobility, Yang Bin expressed the hope that the two sides would promote student and teacher exchanges, develop greater cooperation, and contribute to the economic development and social progress of the two countries. Skrha noted that Tsinghua

University is a world-class university, and Charles University is willing to join hands with Tsinghua to carry out practical cooperation on various aspects beneficial to the development of research and teaching in both universities.

During his visit to the Czech Technical University, Yang Bin held talks with Doc. RN Dr. Vojtěch Petráček, CSc., Rector of the University, and Prof. Ing. Zbynek Skvor, CSc., Vice-Rector for International Relations. Yang Bin said that he would encourage more exchanges between the two universities, as well as greater research cooperation. Petráček expressed his expectation for more innovation and development resulting from the cooperation between both sides.



During his visit to Prague, Yang Bin also held talks with H.E. Mr. Zhang Jianmin, China's Ambassador Extraordinary and Plenipotentiary to the Czech Republic. Yang Bin said that he had visited Prague's universities to open up cooperation between Tsinghua and Central Europe in the field of education, and to build a bridge for talent exchange between China and the Czech Republic. Zhang noted that the year of 2019 marked the 70th anniversary of the establishment of diplomatic relations between China and the Czech Republic. The Chinese Embassy in Prague was willing to support Tsinghua and continue to promote cooperation in education and culture between the two countries. The two parties also discussed

cooperation between Tsinghua and the relevant Czech institutions in the field of humanities and the arts.

On the 19th January, Yang Bin also visited the Chinese International School of Prague and held talks with Dai Bo, Head of the School, and Ana H. Blackstad, Head of the American Academy in Prague.



## Launch ceremony for series of postage stamps for the 2019 jilai year designed by Han Meilin of the Academy of Arts and Design, Tsinghua University, held in the Palace Museum

On December 21st, 2018, the Palace Museum held a press conference, announcing that the opening ceremony for "Han Meilin: Chinese Zodiac Art Exhibition" will be held in the Hall of Literary Brilliance (Wenhua dian) on January 5th, 2019, in tandem with a launch ceremony for a new series of postage stamps for the 2019 jilai year (i.e. the Year of the Boar).



The exhibition presents Han Meilin's depictions of the Chinese Zodiac (shengxiao, the twelve animals) in painting, calligraphy, sculpture, ceramics, zisha pottery, woodcarving, ironwork, furniture, and folk art. Giving insight into the artist's understanding and preservation of traditional art forms, the exhibition reflects his unique character and the modern zeitgeist through his artistic breakthroughs and innovation.



# Tsinghua University New Year Gala 2019

On the evening of December 31st, the Tsinghua University New Year Gala 2019 was held in the Sports Center. University leaders Qiu Yong, Chen Xu, Jiang Shengyao, Ji Junmin, Yang Bin, Li Yibing, You Zheng, Guo Yong, Zheng Li, Xiang Botao and more than 3,500 teachers and students celebrated New Year together.

As the New Year bell rang, President Qiu Yong and Secretary of the CPC Tsinghua University Committee Chen Xu delivered New Year's speeches respectively.



On behalf of the university, President Qiu sent New Year's greetings to students, teachers and alumni present, saying that “the passing of 2018 has left us many beautiful memories”.

President Qiu reviewed the achievements and progress made by Tsinghua University in 2018: three teachers of Tsinghua university won first prize in the National Young Teachers' Teaching Competition; Tsinghua University Female Basketball Team won the championship of the National University Basketball Competition and the women's title at the 3x3 FISU World University League – 2018 Finals; Tsinghua University Institute for Artificial Intelligence, Tsinghua University Center for Big Data and Institute for Aero Engine, Tsinghua University were established; Tsinghua Bamboo Slips have been collected for ten years and the eighth edition of research results on Tsinghua Bamboo Slips was released; the Future Laboratory successfully developed the technology of turning traditional images into touchable images; Tsinghua's supercomputing team won the world's top three supercomputing competitions and successfully held the first International Forum on Engineering Education; the ground-breaking ceremony for the

Tsinghua Southeast Asia Center (Tsinghua SEA) was held in Bali, Indonesia; the first Asian Higher Education Outlook report was released by the Asian Universities Alliance (AUA), which was established through the initiative of Tsinghua University; Tsinghua University Latin America Center inaugurated in Santiago, Chile; thus Tsinghua University reached new heights through the implementation of its global strategy.

President Qiu said that with these achievements, the university had become more firmly convinced that only in the historical process of serving the country could it ascend to the level of a world-class university, that self-reliant Tsinghua people have unlimited passion for innovation, and that the vision of running a university determines the vision of talents it cultivates.

“In 2018, we strove together. At this moment, we gather together to welcome 2019.” Facing the future, President Qiu said: “I believe that Tsinghua people will always persevere. Let's forge ahead together and witness a more beautiful Tsinghua University, a more beautiful China, and a more beautiful world in 2019.”



Following the bell at midnight, Chen Xu also extended her New Year's greetings to all present. She stated that the new year brings forth new hope, expectations and imagination. For China, 2019 will be a very important year. We will celebrate the 70th anniversary of the founding of the People's Republic of China following our celebration of the 40th



anniversary of Reform and Opening up in 2018. For Tsinghua, 2019 will see a year of continued progress. We will put in all our efforts to push forward comprehensive reform, develop Tsinghua into a “double first-class” university and continue to strengthen the foundation of talent training and scientific research, serving the country’s economic and social development, cultural inheritance and innovation, and international exchanges and cooperation to a higher level.

The year of 2019 should be a more rewarding year for all. Chen Xu also hoped that Tsinghua people would follow Chinese President Xi Jinping in his New Year Speech for 2019, start every day in 2019 with rock-solid confidence, and racing against time with unwavering determination, and make every effort for a better future. She sincerely wished all the teachers, students and alumni would make more achievements and greater contributions in 2019, promoting and supporting Tsinghua University as a symbol and benchmark of higher education in China.

At the gala, the 7th Students’ Most Loved Teachers Award Ceremony was also held and the “Students of the Year 2018” were announced.

The New Year Gala is a traditional activity at Tsinghua University. With the slogan “Tonight To Nine”, this year’s gala continued the theme “I want to celebrate the New Year with you”, with innovative designs developed in various aspects, expressing the beautiful vision of Tsinghua people from around the world gathering together to celebrate the new year.

