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NTU HIGHLIGHTS

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Face to Face with
CHUNG-MING KUAN

GSAT to Strengthen University-Industry Coalition

Kendo Varsity Going Strong

EMBA Alumni Fundraising Reunion

Bravo to
Research Breakthroughs

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The courtyard of NTU Administration Building.

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President Chung-Ming Kuan: Pioneering the Future of NTU

NTU President Chung-Ming Kuan.

Mission and Vision

Established in 2019 and spearheaded by President Chung-Ming Kuan, the *Future NTU* project aims to develop education models that build a "learner-centered open university" where barriers across disciplines and industries are broken down and students are empowered to take control of their learning. The goal of this new project is to create a learning environment in which learners can receive guidance and resources they truly need to advance their learning, pursue their passions, and pioneer the future.

The Making of *Future NTU*

"The world is changing at an unprecedented speed, and there is a consensus that future talents should possess interdisciplinary knowledge. Eventually, the subject of how to balance students' cross-disciplinary learning and domain knowledge training will be a challenge in the future," said President Kuan. "Is our current higher education system developing the talents we need for the future?"

President Kuan continued in a hopeful tone: "I recall raising the notion of '*Future NTU*' during the election process. I hoped to see NTU prepare and nurture our next generation of talents. Since I became

President, I have delegated this crucial task to D-School and invited faculty members, students, alumni, and industrial experts to brainstorm innovative solutions that can help us stir towards that goal."

In November 2020, after NTU officially announced its mission of building *Future NTU*, every department and administrative unit began devising action plans in support of the project. Currently, NTU's action plans include inviting graduates to continue their learning journey back on campus and encouraging enrolled students to take a gap year. In addition, students are also given the autonomy to choose the courses they wish to attend and to design their own academic programs.

These plans are aimed at not only removing barriers between different disciplines to offer flexibility, but promoting an environment where cross-generational learners can exchange ideas and explore new possibilities. According to President Kuan, the end goal of these plans is to encourage collective intelligence and collaboration between the industry and academia. "D-School is the mastermind behind these projects, and I attend all their meetings and discussions to listen to the feedback of students and faculty members."

said President Kuan. "The actions we take are endorsed by all parties, and that is why everyone is motivated to continue advancing the project."

Promoting Sustainability and Social Responsibility

In 2020, NTU issued its first Social Responsibility and Sustainability Report, publicizing its efforts to help make the planet more sustainable. "There is only one planet we call home, and we should work together to ensure sustainable development," reiterated President Kuan as he explained the rationale for the establishment of the Sustainable Development Promotion Committee and Office of Sustainability and NTU's vision and endeavors in promoting sustainability. Thus, NTU has made strides in implementing green transportation and saving energy on campus. For example, the vehicles at the NTU Experimental Forest are planned to be powered by electricity, and electric vehicles will be prioritized on the main campus.

NTU has also extended the values of sustainability and responsibility to the global level by assisting countries such as Tuvalu. Rising sea levels every year have led to water salinization, severely impacting the health and livelihood of the local people. "We sent teams to Tuvalu to improve the local living conditions and water quality. We believe these kinds of international assistance are of great significance," said President Kuan.

Q&A with President Kuan

NTU President Chung-Ming Kuan.

Q: Who influenced you the most?
A: My wife. She is the head of our household.

Q: If you could go back to your 20s, what would you like to do?
A: Join a rock band and be a guitarist.

Q: What will you do after leaving office?
A: Learn Mongolian and Turkic script.

Q: What is your current favorite book?
A: "*The Death of Lin Mosei and the extinguishment of the Post-War Taiwan Resistance of Japan*" is a very interesting book.

Q: What is your current favorite song?
A: "Teens Edgy" by a Taiwanese Folk rock band called "Lao-Wang Band (老王樂隊)."

Q: What is your favorite thing about NTU?
A: Our faculty. After becoming President, I discovered how talented and outstanding our teachers are.

Standing Firm while Going Global

Despite the challenges brought by the pandemics, NTU has not ceased to interact and strengthen relations with its international partners. Meetings and events were still held—just in more diverse and innovative forms. “We are working on translating our campus announcements and protocols into English, so our international staff and students can better understand our operating procedures. I believe this will enhance our administrative efficiency and promote internationalization. We also inaugurated the International College of NTU in 2021 where we offer international students all-English programs, hoping to gain visibility globally,” remarked President Kuan.

In addition, NTU is intended to promote and deepen cooperation between industry and academia. “We have launched the NTU International Mentorship Program because we believe learning does not just take place inside classrooms, and students need the experience and guidance of experts and practitioners. Thus, we assist international students to apply for internships at businesses where they receive one-on-one counseling from corporate mentors. The mission of *Future NTU* is to pioneer the future, and we believe NTU are taking important first steps,” stressed President Kuan.

NTU President Chung-Ming Kuan.

BIO

Chung-Ming Kuan (President)
Term of Office: January 2019 - present

President Chung-Ming Kuan was born in Taipei City in 1956. He received his doctorate degree from the University of California, San Diego. He is now the Chair Professor of the Department of Finance at NTU, Joint Professor of the Department of Economics at NTU, Joint Research Fellow of the Institute of Economics at Academia Sinica, and Academician of Academia Sinica. His past positions include Dean of the Institute for Advanced Studies in Humanities and Social Sciences at NTU, Associate Professor with Tenure in the Department of Economics at the University of Illinois at Urbana-Champaign, Director of the Institute of Economics at Academia Sinica, Executive Yuan Minister without Portfolio, Minister of the Council for Economic Planning and Development, and Minister of National Development Council.

Inauguration Ceremony of Graduate School of Advanced Technology (GSAT)

The Graduate School of Advanced Technology (GSAT)—planned and set up by NTU in line with the Act for the National Key Fields Industry-University Cooperation and Skilled Personnel Training—was inaugurated with fanfare on December 24, 2021. The GSAT inauguration ceremony was attended by high-ranking government officials, including President Ing-wen Tsai, as well as representatives from the industry collaborators. GSAT will build on the foundation of NTU's existing industry-university cooperation to help maintain Taiwan's key position in the high-tech industry chain by continuously raising the level of research and development as well as cultivating highly-skilled talents. Moreover, NTU sees this effort part of its social responsibility as the top-rated university in Taiwan.

GSAT has received ample resources in capital and personnel from TSMC, Powerchip, MediaTek, and Etron Technology, as well as the solid support of university faculty. GSAT will create curricula with corporate collaboration, recruit talents from industry as faculty members, provide students with R&D internship opportunities, and offer courses instructed in English, so that the students will have more opportunities to explore topics with practical applications and engage in significant interactions with industry. Such hands-on experiences will equip the GSAT graduates with advanced technical skills, making them highly competitive on the international stage.

NTU President Chung-Ming Kuan described GSAT as showcasing a new type of academic institution that connects higher education and the high-tech industry, creating synergy as both sides seek innovation and breakthroughs, face pressure from international competition and local need, and require sufficient manpower. The cultivation of talents at GSAT will spur innovation as well as help maintain our leading position in the world. The Act for the National Key Fields Industry-University Cooperation and Skilled Personnel Training offers increased autonomy in personnel, funding, and industry-university cooperation. The flexible regulations create a sandbox for innovative education, opening the way for universities to achieve a greater degree of autonomy. President Kuan expressed his expectation that GSAT will set a precedent by optimizing its potential, which in turn will lead to the application of more flexible regulations to other academic institutions.

The Dean of GSAT Tzi-Dar Chiueh is an IEEE Fellow. Several programs in the field of semiconductor are already accepting students, such as Program in Integrated Circuit Design and Automation, Program in Semiconductor Device, Material, and Hetero-integration, and Program in Nanoengineering and Nanoscience.

Scan the QR Code to visit GSAT official website.

Group photo of the GSAT inauguration ceremony, featuring President Ing-wen Tsai (6th from the left), NTU President Chung-Ming Kuan (6th from the right), and other distinguished guests.

NTU International College: A "World-Class" College

Long recognizing the value that international students bring to campus, National Taiwan University remains committed to attracting global talents and strengthening its collaboration with its sister schools. The newly-founded International College of NTU (NTUIC) offers English-instructed international degree programs that highlight Taiwan's niche areas of research and unique strengths, aiming to nurture professionals and talents with global competencies.

NTUIC programs focus on SDGs topics or the latest research trends. For example, The Master Program in Global Agriculture Technology and Genomic Science (Global ATGS) is a cross-disciplinary program that integrates agricultural biotechnologies and smart agriculture. Students not only acquire training and knowledge about smart farming but also are encouraged to reflect on the relationship between modern agricultural technology and development and global sustainability.

Master's Program in Biodiversity (MPB) provides rigorous instruction and training on nature studies, equipping students with knowledge and know-how on biodiversity conservation and governance as well as sensitive awareness of our natural heritage. Both programs boast a curriculum that balances academic training and practical application in order to nurture talents who can identify and address local and international needs. In addition, Master's Program in Smart Medicine and Health Informatics and Master's Program in Disaster Risk Reduction and Resilience are expected to begin in 2022 and 2023, respectively.

NTUIC also proactively seeks partnerships with international academic communities through educational events. In December 2021, NTUIC co-hosted an online symposium titled "Data-driven Life Science in the Era of High-throughput Sequencing" with the University of Tokyo's Graduate School of Frontier Sciences (UTokyo GSFS) to discuss the latest development of high-throughput sequencing. NTUIC Professor Takeshi Itoh cooperated with UTokyo Professor Yutaka Suzuki in arranging the symposium. Prof. Shu-Jen Wang, Dean of NTUIC, and Prof. Atsushi Deguchi, Dean of UTokyo GSFS, were invited to give opening remarks. The event concluded with three scholars from both sides sharing their insights on how the technology may be applied in agriculture, evolution, medicine, and gene editing analysis research. The event not only was rewarding but fostered international friendship.

NTUIC will strive to offer more opportunities to international students and build an inclusive education platform where students can be empowered with the ability, skills, and motivation to implement SDGs solutions—thus becoming global leaders who can build a sustainable future.

NTUIC co-hosting an online symposium with UTokyo GSFS.

UTokyo-NTU Joint Conference 2021: Cooperation towards the Post-Corona Era

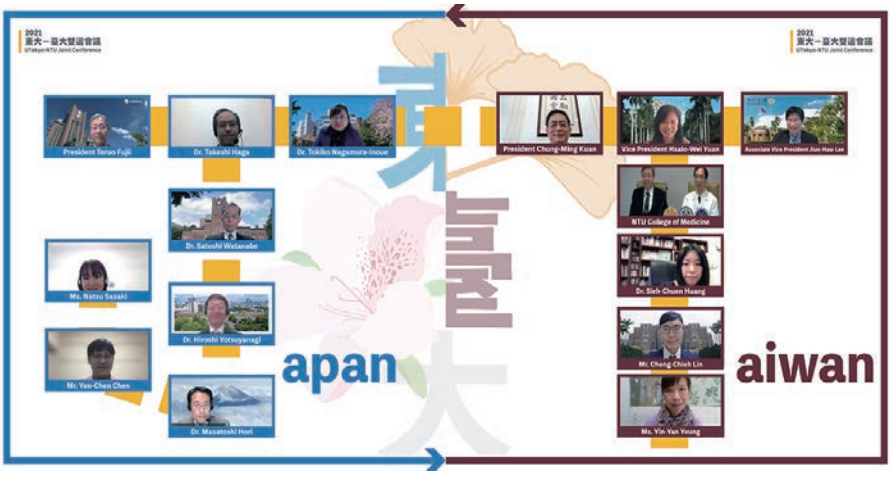
NTU and the University of Tokyo hosted the UTokyo-NTU Joint Conference 2021 during December 8-10, 2021. The conference was held online for the first time due to the COVID-19 pandemic, with nearly 300 faculty members and students in attendance. The conference theme was "Cooperation towards the Post-Corona Era," and many colleges and centers from both universities actively participated in the interdisciplinary academic exchanges.

The conference was opened by Dr. Teruo Fujii, President of the University of Tokyo and Dr. Chung-Ming Kuan, President of NTU. In his opening remarks, President Fujii expressed the wish that both universities would continue to explore innovative cooperation models by taking advantage of their geographical proximity. President Kuan observed that the pandemic has had a huge impact on daily life, and that facing such a global challenge underscores the need for cooperation among higher education institutions in different countries. He expressed the hope that the two universities would work together to find coping strategies and create a better future by engaging in cross-cultural and interdisciplinary exchanges.

Keynote speeches were presented by Prof. Hiroshi Yotsuyanagi, Chairman of Division of Infectious Diseases, Advanced Clinical Research Center, the University of Tokyo, and Prof. Wang-Huei Sheng, Chairperson of the School of Medicine, NTU. They introduced the pandemic situation and prevention measures taken in Japan and Taiwan, respectively. Both speakers mentioned that in response to the rapid changes in the COVID-19 situation, collection of real-time data and prompt decision-making on policies and measures are of vital importance. Besides the keynote speeches, faculty and students from both universities who had participated in collaboration projects shared their experiences to illustrate how the collaboration had benefited their personal research and global outlook.

Closing remarks were presented by Dr. Hsiao-Wei Yuan, Vice President for International Affairs of NTU. She underscored that the close connection between the faculty and students from both universities is the key factor in maintaining the friendship. She anticipated that both parties would collaborate more deeply on sustainability issues in the future in order to contribute to global society.

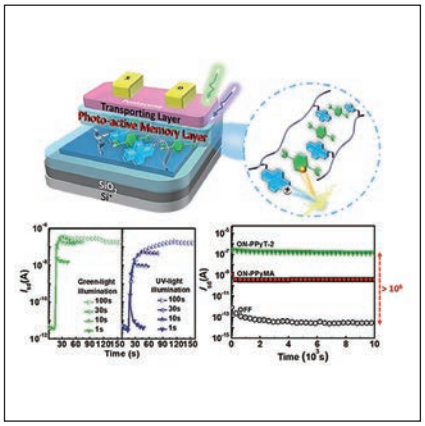
The collaboration between NTU and the University of Tokyo began in 2015, followed by President Kuan leading a delegation of 155 NTU faculty and students on a visit to the University of Tokyo in 2019. In recent years, the universities have taken turns hosting large-scale bilateral and interdisciplinary conferences. This conference was the fifth installment.



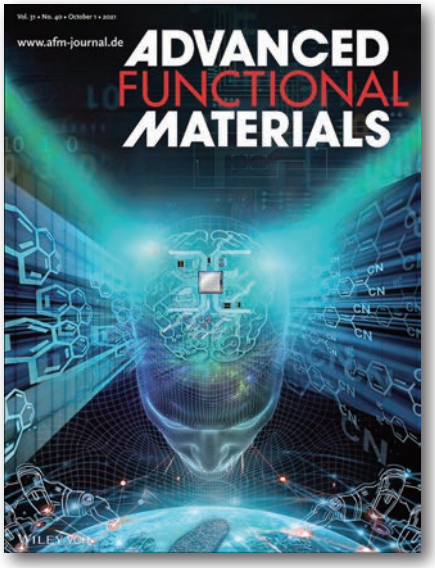
UTokyo-NTU Joint Conference 2021.

Internationally Recognized Breakthrough in Organic Photonic FET Memory

A monumental breakthrough was made by Professor Wen-Chang Chen's research team of the Department of Chemical Engineering and Advanced Research Center for Green Materials Science and Technology at NTU (ARC-CMST, NTU). Funded by the Higher Education SPROUT project of MOE and MOST, Prof. Chen and his team developed charge transfer-based supramolecular electrets in high-performance next-generation organic photonic memory devices, featuring unprecedented high responsive speed and long-term stability. The research article, published in October 2021, made the inside back cover of *Advanced Functional Materials*, an international top-tier science journal.



Prof. Chen's team adopted a donor-acceptor type structure that effectively forms charge-transfer supramolecules as photoresponsive electrets for charge storage. The photogenerated excitons first erase the charges written in the field; then, upon retention of the reverse recovery charge in the charge-transfer complex, they achieve the read-write properties of a memory. Moreover, the spectra of the semiconductor and electret layers render the device a multiband photoresponsive range with a high memory on/off ratio of over 10^6 after 10^4s.



Extensive research has been conducted on organic optoelectronic devices owing to their low cost and mass-production potential; however, voltage restrictions and stability are areas for improvement. Committed to the development of memory materials and devices, Prof. Chen proposed the novel concept of using photoresponsive inorganic and organic floating gates as well as using light as an impetus for electric responses in memory devices in 2017. His collaboration with Prof. Toshifumi Satoh of Hokkaido University also identified organic nanomaterials that can be employed to achieve high-performance photoresponsive memory devices. There is great potential for applications of photonic memory devices, such as image-identification by artificial retinas. Photonic memory could also be applied to wearable devices in combination with biomaterials that are inherently light-sensitive and compatible with the human body.

The breakthrough of using charge-transfer supramolecules in organic photonic FET memory devices has expanded the frontiers of optoelectronic applications. This cutting-edge material design and blending for devices offer a new perspective to the development of next-generation organic photo-driven memory.

Scan the QR Code to read the journal article.

1
2

1. Charge-transfer supramolecules applied in next-generation supramolecular electrets photo-driven memory devices.
2. The research result made the inside back cover of the published issue of *Advanced Functional Materials*.

Propelling New Discoveries: NTU Unveils RBM24's Role in Cardiac Myofibrillogenesis

Cardiovascular diseases are the leading cause of mortality and morbidity in the world, and dilated cardiomyopathy (DCM) is the most common nonischemic cardiomyopathy. In DCM, the heart's ability to pump blood is lessened due to an enlarged and dilated pumping chamber and eventually, patients suffer from congestive heart failure. There is currently no cure for DCM, and patients can only receive supportive care or a heart transplant. To save lives, a research team led by Dr. Su-Yi Tsai, Associate Professor of the Department of Life Science, launched major efforts to discover a better way to treat the disease.

Their discovery on RNA-binding motif protein 24 (RBM24) was published in *Circulation Research*. Dr. Tsai and her team discovered the molecular mechanism of cardiac splicing factor RBM24 in sarcomere assembly and cardiogenesis. Their research proved that RBM24 is critical in cardiac development and acts as an upstream regulator of numerous cardiomyopathy genes. This finding offers major insights and new treatment strategies for patients suffering from DCM.

Sarcomere, the basic contractile unit of the heart muscle, is composed of hundreds of sarcomere proteins. Past clinical studies have suggested that sarcomere gene mutations may induce cardiomyopathy. Dr. Tsai and her team used human pluripotent stem cells (hPSCs) as a model to reveal how RBM24 acts as a master regulator, modulating the dynamics of core myofibrillogenesis genes (*ACTN2, TTN, and MYH10*) in a differentiation stage-specific manner. By studying the upstream molecular formation of sarcomeres, the team proved that mutations in genes encoding sarcomeric proteins certainly can lead to failures in sarcomere assembly—which results in developmental defects and cardiomyopathies.

This groundbreaking discovery made by Dr. Su-Yi Tsai, Serena Huei-An Lu, Liang-Yu Hsu, and undergraduates Kang-Zheng Lee and Yu-Chen Yeh under the guidance of Dr. Su-Yi Tsai significantly contributes to the future development of new therapeutics for cardiomyopathies.

Scan the QR Code to read the journal article.

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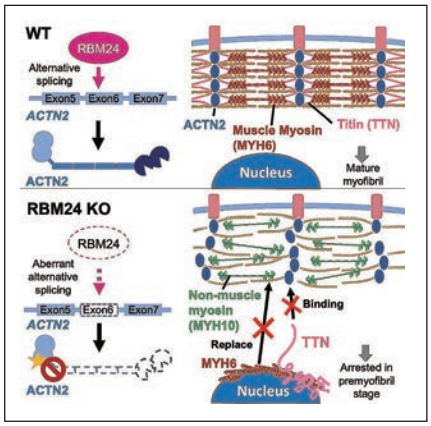


1.A group photo of the research team.

2.A working model of RBM24 function in human sarcomere assembly.

NTU Research Team Builds the Largest Supramolecular Cuboctahedron

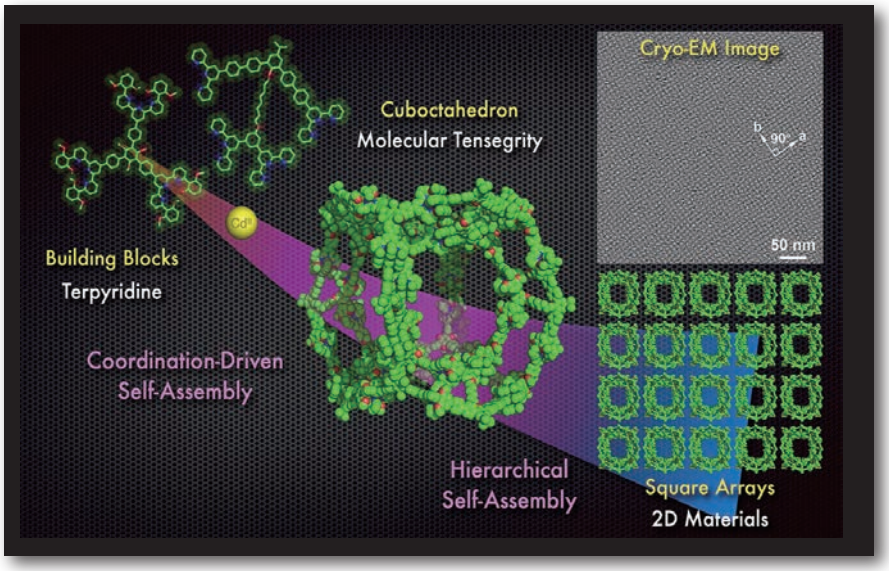
S-layers are commonly seen in prokaryotic organisms and play an important role in cell protection and surface interactions. These layers are composed of identical proteinaceous subunits that can self-assemble into ordered porous 2D arrays of 5-15 nm thickness and unit cell sizes in the range of 3-30 nm. To explore how protein motifs can be tiled into 2D crystalline materials, a research team led by Professor Yi-Tsu Chan of NTU's Department of Chemistry researched porous layers assembled from artificially synthesized molecules of similar dimensions to explore the construction of giant well-defined building units.

Inspired by Buckminster Fuller's concept of tensegrity (tensional integrity), the team developed a precise coordination-driven self-assembly methodology for the rational construction of a molecular cuboctahedron with a circumscribed sphere diameter of over 10 nm. The result not only marks a significant breakthrough in the area of chemical mimicry of S-layer self-assembly but is also the largest synthetic cuboctahedron reported to date.

The cuboctahedron is assembled from 76 subcomponents and has a double-layered structure, resembling a tensegrity architectural structure. It is worth mentioning that the high stability of the cuboctahedral complex enables small-angle X-ray scattering (SAXS) measurements under dilute conditions, providing crucial structural evidence. Moreover, the team collaborated with the Academia Sinica Cryo-EM Center (ASCEM) to conduct cryo-EM experiments on the S-layer-like square arrays of the giant cuboctahedra in vitrified acetonitrile solution with a lattice constant of 7.9 nm. Through this experiment, such local packing defects as dislocations and grain boundaries in the 2D arrays were analyzed and elucidated.

The general self-assembly methodology and the serendipitous observation of S-layer-like square arrays presented in this study not only exemplify scientific discovery but also lay the foundation for developing bottom-up techniques for the construction of 2D porous supramolecular materials.

The research was supported by the Ministry of Science and Technology of Taiwan, the Center for Emerging Materials and Advanced Devices at National Taiwan University, and the Academia Sinica Investigator Award Grant, and published in the February 2022 issue of *Chem* (Cell Press).



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Schematic illustration of hierarchical self-assembly of gigantic supramolecular cuboctahedra into 2D square arrays.

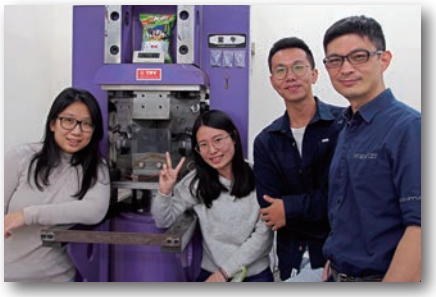
Mechanistic Insights into the Colossal Magnetoresistance Effect for Potential Application in Magnetic Storage Technology

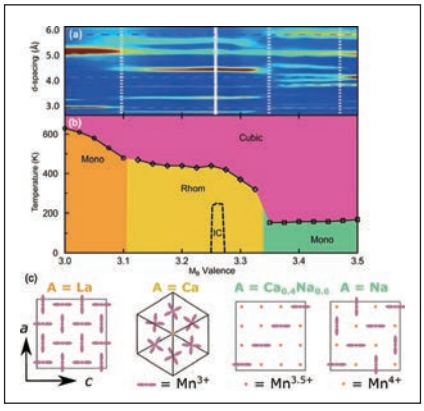
Magnetoresistance (MR) is a technologically significant phenomena by which the resistivity of a material changes with an applied magnetic field. This property can be observed in numerous conductive materials, but changes of resistance typically measure just a few percent with rather limited sensitivity. Nowadays, MR materials are widely used in everyday life, as reader heads of hard drives in computer or consumer electronics.

Other functional materials were explored for potential technology applications, for instance in the 1990s the colossal magnetoresistance (CMR) was demonstrated in manganite perovskites. The archetypal system was intensively investigated, and soon the optimal MR response was established in a specific doped region. However, the phenomena occur only at rather low temperatures and the phase diagrams remain controversial. It is a long-standing conundrum that while such a precise doping value leads to maximized MR effect, the observed phase segregation has prevented an atomic-level understanding.

Assistant Research Fellow Dr. Wei-Tin Chen of the NTU Center for Condensed Matter Sciences collaborated with Associate Professor Mark Senn of the Department of Chemistry at the University of Warwick to tackle this conundrum by taking an unconventional route. Chen's team is dedicated to conducting high pressure research, including synthesis techniques with pressures of a few gigapascals (equivalent to the pressure at hundreds of kilometers below the Earth's surface) to form metastable materials. Such techniques are particularly useful for exploring novel functional materials, because unstable structural distortions and metastable magneto-electric phases may be stabilized under extreme conditions.

A series of high pressure synthesized quadruple perovskites were utilized as the model framework to investigate the target functional property. A new state of matter was revealed to have an alternating ordered-insulating and disordered-conducting stripes arrangement at particular doping regions through crystallographic information from synchrotron x-ray and neutron international central facilities, coupled with detailed systematic symmetry operation examination. This result provides a natural mechanism how an external magnetic field will induce the collapse of the insulating state, and it sheds light on how the MR effect might be enhanced in operational temperatures and sensitivities. The research was published in the renowned journal *Nature Communications* in 2021, highlighting the great potential of the association between high pressure research and structural insight as well as providing mechanistic understanding to explicate intriguing physical phenomena.





Scan the QR Code to read the journal article.

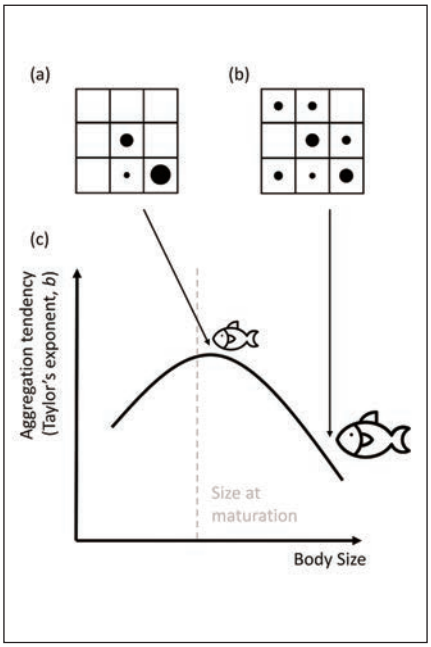
1. PRESS Lab members with high pressure apparatus.
2. Phase diagram and ordered states of the target series.

Hump-shaped Relationship between Aggregation Tendency and Body Size within Fish Populations

Distinguished Prof. Chih-hao Hsieh and master's student Ruo-Yu Pan from the Institute of Oceanography, NTU, together with Assistant Prof. Ting-Chun Kuo from the NTOU, unveiled a hump-shaped relationship between aggregation tendency and body size at a scale within the population. Specifically, larger adult fish exhibit a more homogeneous distribution than the smaller adult fish when their mean abundances increase. This study, published in *Ecography* in September 2021, provides empirical evidence that larger adult fish are important for the population to maintain more homogeneous spatial distribution, providing insights for the management of size-selective fisheries.

A less heterogeneous spatial distribution is important for population sustainability because it allows the population to spread the risk across spaces. The spatial distribution pattern of a population can be influenced by many factors. For example, species with different demographic traits (i.e., r-K life history traits) can have different spatial distribution patterns due to their difference in habitat requirement, tolerance to environmental stress and mobility. This research topic has gained attention for comparative studies among species. However, the effect of the demographic traits (e.g., body size) on the spatial distribution pattern is rarely explored empirically within the population.

In particular, the team looked into how "aggregation tendency" changed among different size classes of the same population. Aggregation tendency is calculated as the exponent (b) of Taylor's power law ($Variance = a \times Mean^b$), representing how aggregated a population will be when the mean abundance increases. Using the 25-year data of nine commercially important fish species in the North Sea, the authors found a hump-shaped relationship between aggregation tendency and body size, with the peak located at the size slightly larger than the size at maturation (Fig. 1c). The result indicates that larger adults distribute less heterogeneously than the smaller/younger adults (Fig. 1a & b); the larger adults thus play a critical role in maintaining a low heterogeneous spatial distribution. This finding highlights the important issue in fishery management, namely fisheries-induced size truncation can destabilize the fish population not only by reducing maternal effect (i.e., reduction of recruitment) but also by changing the spatial structure. For more insight, a more comprehensive fishery management that considers both size and spatial structure, as well as their co-effect is needed.



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The hump-shaped relationship between aggregation tendency and body size within population (c) indicates that larger adults, which have lower aggregation tendency, distribute less heterogeneously (b) than smaller adults (a).

NTU Library and RDMLA Team Launch Chinese Research Data Management Course

Research Data Management (RDM) is an important way of making open science a reality. By systematically collecting, interpreting, and storing data gathered in the research process, RDM conforms to research theories and enhances the effectiveness of research collaboration before proceeding to permanently archiving, disclosing, and sharing its accessibility. It enhances research transparency and achieves the benefits of research reproducibility, as well as expanding academic influence.

NTU Library has taken positive action in support of open science. Besides providing preferential plans for Open Access journal submissions, an international cooperation program for RDM courses was launched in June 2020. The series of carefully structured Chinese RDM online courses has laid the foundation for the RDM services of Chinese academic libraries around the world, and they are expected to provide researchers with ever more professional academic support in the future.

Jointly launched by such prominent international academic institutions as Harvard Medical School, Harvard Library, and Simmons University, the Research Data Management Librarian Academy (RDMLA) is a free open course that covers the basic concepts of RDM, promotes service design, and introduces analytical tools, while acting as a collection platform. In addition to librarian training, academic researchers can also utilize the course as self-learning resources to achieve RDM information literacy in a short time. Officially launched on Canvas on November 19, 2021, the Chinese version of the RDMLA online course includes 11 units.

The RDM course for librarians. (Chinese version of RDMLA)

To complement the launch, NTU Library hosted an online workshop on research data management practice in November 2021. Scholars and librarians from Taiwan and overseas were invited to share their experience in learning about and working with RDM. Nearly 230 people participated in the exchange. In the meantime, learning resources, tools or platforms in both Chinese and English are actively organized and classified based on the life cycle of research data to build a learning hub. This allows academic librarians and researchers to systematically obtain RDM-related knowledge, learning, and service resources. NTU Library holds an open attitude towards sharing and invites all sectors to realize and practice open science together.

Caspar Lant: NYU Fulbright Fellow Makes the most of NTU's Interdisciplinary Resources

Scholars from around the world choose Taiwan as their destination to explore and enrich their research portfolio each year, and NTU is honored to welcome many of them at its various research facilities or labs.

Caspar Lant was awarded a Fulbright Program Scholarship in 2020. Moreover, intending to advance his Chinese studies, he chose Taiwan as the place he'd call home for a year. Caspar got in touch with Professor Jane Hsu, the first female professor of Computer Science and Information Engineering at NTU and the director of the NTU IoX Center. Specializing in artificial intelligence, IoT, and human-computer interaction, the center is a multidisciplinary space bringing together local and international researchers who are passionate about providing innovative technology solutions.

When asked about his personal motivation in research, Caspar immediately responded that he wants to utilize technology to help tackle health issues for both humankind and the environment. One of his current projects is a medication management device to dispense the right dose while AI technology monitors intake to prevent overdosing and addiction. Medication management also helps to reduce excess medication from contaminating water resources and aquatic ecosystems.

Located in downtown Taipei, NTU is a stone's throw from the hills and ocean surrounding Taipei. Casper takes frequent walks in Fujhousan Park while he looks for inspiration or needs to clear his head. Even though Caspar has been living in Taiwan only for a few months, he is already a familiar face in the local community. The nearby food vendor recounts his weekly visits and knows his order by heart, and the neighborhood barber knows just how he prefers his haircut.

Although his stay has been affected by pandemic prevention measures, Caspar said that his experience at NTU has far exceeded his expectations and he would recommend NTU to scholars worldwide. He is grateful for the opportunity provided by Fulbright Taiwan and hopes there will be more exchanges between New York University and NTU. While there are still a few more months until the end of his stay, Caspar is already looking forward to coming back to Taiwan in the future. NTU will welcome him back with open arms!

Caspar Lant, an adjunct instructor of physics from New York University (NYU), is passionate about scientific research and hopes to utilize his research to decrease damage and impact on the environment. He is outgoing and energetic, with a love for not just the sciences, but also culture and languages. Before coming to Taiwan, he had conducted research in Berlin and Shanghai. He is fluent in English, German, and Chinese.

NTU 2021 EMBA Alumni Fundraising Reunion

On November 26, 2021, National Taiwan University held its first College of Management EMBA alumni fundraising reunion. Hosted by NTU Office of Financial Affairs, over one hundred EMBA alumni and faculty gathered to celebrate the 93rd anniversary of the school and continue to build upon its centennial mission.

In his opening remarks, President Chung-Ming Kuan highlighted the pivotal milestones that NTU has reached over the past 3 years. Since he took leadership, President Kuan has strived to build the *Future NTU* project and a campus committed to sustainability and environmental stewardship. He encouraged faculty and students alike to engage in more discussions and work together in creating an inclusive learning environment in which everyone on campus can thrive through diversity.

"Sustainability is a global core value and also a concept that is infused through the campus. The Social Responsibility and Sustainability Report (USR) we publish demonstrates the social responsibility efforts of our members and our unwavering determination to achieve carbon neutrality and reduce carbon emissions," affirmed President Kuan. With the inauguration of the NTU Office of Sustainability, NTU has been able to advance new environmental solutions and amplify the impact of its action plans on and off campus.

President Kuan also stated that the newly established preparatory committee for NTU's 100th anniversary is already at work planning for the celebratory events in 2028 to commemorate NTU's centennial year of history and glory. Over the past years, NTU has pioneered social development work and shouldered great responsibilities. Since the *Future NTU* project, sustainability, and NTU's centennial anniversary are three inseparable missions that require funding, resources, and the support of alumni, NTU also launched its first "Centennial Vision Fund" in 2021 in order to inspire people to support the school through donations. "Many a little makes a mickle; these acts of generosity will help strengthen the NTU community and continue to pass down the school's legacy," said President Kuan.

Over 6 million New Taiwanese Dollars were raised during the event, and President Kuan presented glass trophies and certificates of appreciation to thank the alumni for their generosity. It is hoped that such events will continue to inspire and engage graduates—and help keep NTU's missions and future close to their hearts.

Group photo of EMBA Alumni Fundraising Reunion.

Silent but Heard: Celebrating Jing-Nong Tai's 120th Birthday

Jing-Nong Tai was born in 1902 during the 28th year of the Guanxu reign in Anhui, China. Tai was a renowned writer, calligrapher, and literary critic who specialized in the study of Classical Chinese literature, history, and art. From 1948, Tai spent over 20 years serving as the Chair of Department of Chinese Literature, National Taiwan University. During his tenure, his contributions made a profound impact on the department's program and quality of education. In his early years, Tai studied the New Literature Movement, Classical Chinese, and calligraphic arts, and was also a prolific writer himself. His knowledge and passion for education not only laid the foundation for liberal arts study in Taiwan but inspired countless students and successors.

In his later years, Tai devoted himself to refining his calligraphic techniques and explored different styles and genres as he traveled. Eventually, he created a unique calligraphic style, coined the Tai semi-cursive script. The six Chinese characters of "National Taiwan University" commonly seen on campus and on the school's official website were adopted from Tai's calligraphy collection.

Since November 2021 marks the 120th anniversary of the artist's birth, Distinguished Professor Long-Shien Lee of the Department of Chinese Literature curated a commemorative exhibition titled "Commemorative Exhibition of 120th Anniversary of the Birth of Jing-Nong Tai," in collaboration with NTU Library to celebrate the artist's prestigious works and legacy.

The exhibition opening ceremony was held on November 20 in 2021, together with the release of a special album that contained a collection of Tai's works. At the event, President Chung-Ming Kuan delivered the opening remarks, and Professor Lee gave a detailed account of the curation process and expressed his gratitude to everyone who had supported the event.

Held from November 12 to December 26 in 2021 at NTU Library, the exhibition was divided into five themes: calligraphy, seal engraving, manuscripts, letters, and artifacts—visitors embarked on a journey through time to explore Tai's legendary works and experience through a selection of his poems and letters.

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1.The six Chinese characters of "National Taiwan University" were adopted from Tai's calligraphy collection.
2.President Kuan delivering his opening remarks at the opening ceremony.
3.Guests appreciating the collections and works of Tai.

The Unrelenting Spirit of NTU Kendo Varsity Unveiled

It was the protective gear that caught her eye. She, a freshman looking for a club to join, saw a group of people wearing a sort of facemask with several thin horizontal metal bars running across the width of the face and a vertical bar running down the center. Curious, she walked across the shiny, wooden floor to take a closer look. Besides the strange-looking outfits, these people were holding bamboo swords in their hands. Suddenly, there was a small commotion, then silence fell. Two swordsmen approached the center and faced each other. She joined a group of onlookers to see what was going on; in the next few minutes, she found herself completely enthralled by the match between the two.

She did not quite understand the rules of the match, but the upright postures of the swordsmen impressed her. The bamboo swords swished through the air like real katanas, aiming for the kill. And then, the strike, which must have been the last blow, was powerful and precise. Cheers erupted from the onlookers, but the victorious swordsman showed no signs of victory. The last strike was immediately followed by *Zanshin*, which she later learned is the state of continued mental and physical vigilance after an attack. Enthralled by this demonstration of kendo dueling, she hurried over to the group of swordsmen, whom she found out to be NTU Kendo Varsity members. At the end of the Club Expo, the freshman went home eager to learn more about the art of Kendo and NTU Kendo Varsity.

Kendo is a modern Japanese martial art that involves the use of bamboo swords called *Shinai* and protective gear called *Bogu* in Japanese. The facemask is an iconic piece of armor called *Men*.

Two sides clash. Ready to strike!

Kendo emphasizes the honing of martial techniques and also the cultivation of the spirit and etiquette. Honoring the values of Kendo, the 34-year-old NTU Kendo Varsity has been an esteemed and close-knit family with the reputation of being a strong competitor nationwide. As expected, glory was brought home again in National Intercollegiate Athletic Games 2021: in the professional group, the women's team won the gold medal while the men's team took home the silver medal; in the general group, the men's team snatched the gold medal. The long streak of remarkable feats has been made possible by the toil and hardship of intensive daily practice, including fundamental moves, martial technique, and participation in endless matches.

The dogged determination of each team member drives them to overcome strenuous drills in their pursuit of the art of Kendo. Calloused hands and feet do not dampen their spirits but become a badge of honor proving the level of devotion and effort they have put into the sport. The caring support and constructive feedback from coaches and other senior swordsmen and women fuel their passion even further. The demanding one-week training sessions held every summer and winter vacation might be daunting for some, but the team always pulls

Taking the lead! This is the victory of speed and strength!

through with members making huge leaps in skills and gaining a profound understanding of the self.

Disciplined training is not all that NTU Kendo Varsity has to offer; the bonding of the team is also treasured with members hanging out together fairly often in their free time. Occasional outings are arranged, and special events are held to create unforgettable memories, such as the *Tachikiri*, a ritual for members who are about to graduate from NTU. During this ritual, the graduating member has to pass a trial of endurance and grit, often by dueling multiple rounds of opponents without taking breaks.

Even after she learned that there is no shortcut in the long and arduous journey of Kendo practice, the freshman did not waver but felt a secret thrill. Still mesmerized by the fierce but precise moves she had witnessed at the Club Expo, she could not wait to start the arduous training of molding the mind and body. Kendo, though not a mainstream sport in Taiwan, challenges not only the strength and stability of the body but also the patience and endurance of the mind in working toward the breakthrough of the individual. Hopefully, many more freshmen will come to appreciate the charisma of Kendo and join NTU Kendo Varsity in celebrating the sport.

Divine Wind: The Science and Art of Typhoons

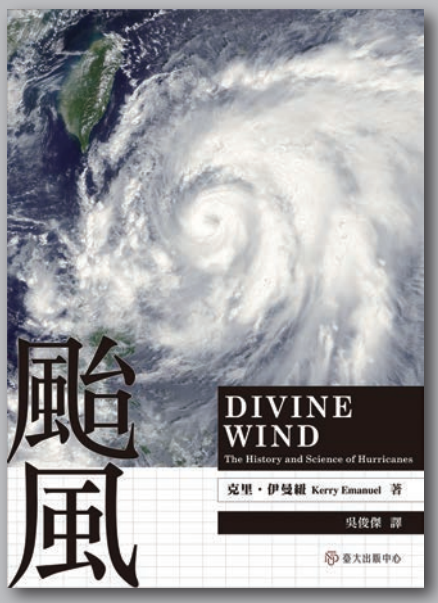
Imagine standing at the center of a place that is 200 times the size of a 32-kilometer wide Roman coliseum, with towering ice walls the size of 4 Jade Mountains soaring into the sky and an avalanche of ice crystals falling from the eye wall's bright white surface. That is what you would feel like standing in the eye of a typhoon and that is how majestic and awe-inspiring typhoons are.

Due to Taiwan's subtropical climate, about 20 to 30 typhoons form every year, of which 4 to 5 will directly strike the island, leaving trails of destruction. Typhoons happen so frequently that any news or information regarding typhoons is no big news and has even become a part of everyday life.

Divine Wind: The History and Science of Hurricanes, written by Kerry Emanuel, one of the world's leading experts on the study of typhoons, and translated by Chun-Chieh Wu, Dean of NTU College of Science, was published by NTU Press in December 2021. In *Divine Wind*, Kerry Emanuel engages readers in breathtaking meteorological events from the perspectives of science, history, and the arts—revealing how typhoons have changed the course of human history. Emanuel offers a detailed account of how typhoons develop, including their formation, intensity, movement, and the violent waves, tides, and torrential rains that accompany them. He not only presents the physics of the tropical atmosphere but explains how benign climates give rise to the world's most powerful typhoons.

Entwined with all the science and physics, the book also includes art and literary works related to some of the world's most important typhoons. These strong winds and waters have served as a literal inspiration to numerous artists and writers throughout the ages—all struck by their power and majesty. For instance, it was perhaps a typhoon during the 17th century that inspired the greatest English playwright Shakespeare to write his drama masterpiece, *The Tempest*.

Divine Wind: The History and Science of Hurricanes captures the profound effects that typhoons have on humanity. It is a fascinating blend of history, science, and the arts, making it a popular science reading.



The author portrays the awe-inspiring phenomenon of typhoons from the perspectives of science, history, and the arts.

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