溥渊

GLOBAL INSTITUTE OF FUTURE TECHNOLOGY

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溥渊未来技术学院 GLOBAL INSTITUTE OF FUTURE TECHNOLOGY

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Dean's Message

Jun Ni

Dean, Global Institute of Future Technology (GIFT),
Shanghai Jiao Tong University ;
Chief Manufacturing Officer, CATL

Amid a rapidly transforming global landscape and the accelerating wave of technological and industrial revolutions, the Global Institute of Future Technology (GIFT) at Shanghai Jiao Tong University was officially launched in August 2021. Established to meet the rising demand for innovation in the intelligent era, GIFT inherits the university's tradition of academic excellence, strong foundations, rigorous standards, hands-on learning, and a spirit of innovation. GIFT was founded on a clear mission: to anticipate global technological trends, identify breakthroughs in strategic emerging industries, and understand the competencies required of future leaders. With this vision, the Institute is pioneering a new integrated model of education, research, and talent development–one that aligns with the evolving demands of a future driven world.

Scientific breakthroughs of the future will depend increasingly on cross-disciplinary innovations. Likewise, tomorrow's industry leaders must master the ability to navigate and synthesize knowledge across multiple domains. Leveraging the university's strengths across diverse disciplines, GIFT is strategically focused on two grand challenges–the health of the planet and the health of people. With this in mind, the Institute has established two flagship areas: Future Energy and Future Health. These programs are designed to foster wide-ranging interdisciplinary research and education, promoting transformative advances in core technologies and generating original, high-impact results. GIFT aims to become a leading hub where academia and industry collaborate seamlessly to drive innovation.

The institute attracts top global talents, forming a leading faculty with international backgrounds and professional experience. GIFT offers students diverse opportunities for practical engagement and global exchange, cultivating open mindedness and global perspectives. By integrating high-quality resources, the institute explores new models of collaboration among academia, industry, and research, providing strong support for cultivating strategic leaders in science and technology.

With a pioneering spirit and a commitment to breaking new ground, GIFT is set to become a force for educational reform and innovation. The new GIFT campus building, scheduled for completion in 2027, will stand alongside the Future Energy Research Institute of CATL to form a "Twin-Tower" innovation hub–an integrated ecosystem of education, research, and talent cultivation.

GIFT stands ready to lead with purpose and vision. Together, we will reach new heights and shape a bold, bright future for the Global Institute of Future Technology.

GIFT Overview

GIFT Overview

A new wave of technological revolution-driven by advances in renewable energy, artificial intelligence, and life sciences-is profoundly reshaping human life and societal progress. These progress advocate for a coordinated strategy integrating education, technology, and talent development. The Global Institute of Future Technology (GIFT) at Shanghai Jiao Tong University (SJTU) is one of the first 12 Future Technology Institutes recognized by the Ministry of Education and was officially established in August 2021. GIFT is the first in the country to launch two new undergraduate programs in "Sustainable Energy" and "Health Science and Technology." It has built a student-centered, excellence-driven education framework across undergraduate, master, and doctoral levels.

The institute collaborates closely with SJTU's traditional strengths in science, engineering, biomedical sciences, and management, working to establish large-scale, interdisciplinary research centers, and promoting an innovative model to accelerate technology commercialization. This provides the innovation engine, talent foundation, and transformation pathway to foster new productive forces and advance economic and social development. The institute's motto is: "Profound in Knowledge, Progressive with the Times." "Profound in Knowledge" originates from The Doctrine of the Mean, symbolizing depth of wisdom and cultural inclusiveness. "Progressive with the Times" is drawn from SJTU's sundial inscription, reflecting a commitment to excellence and adaptability in a changing world. The institute is named the Global Institute of Future Technology (GIFT), symbolizing a dedicated faculty cultivating gifted individuals with care and vision. GIFT is committed to breaking boundaries in learning, disciplines, and institutions, and to building a globally influential, China-rooted model of industry-education integration. Its mission is to nurture strategic, globally-minded leaders for future industries.

Organizational Structure

Governance Leaders

Kuiling Ding
President of SJTU, Academician of the Chinese Academy of Sciences

Lifeng Xi
Executive Vice President of SJTU

Xinghao Jiang
Vice President of SJTU

Honorary Deans

Robin Zeng
Chairman and CEO of CATL, member of SJTU board of trustees, and Honorary Dean of Global Institute of Future Technology

Guang Ning
President of Ruijin Hospital affiliated to SJTU School of Medicine, Honorary Dean of Global Institute of Future Technology, Academician of the Chinese Academy of Engineering

Administration Leaders

Jun Ni
Dean
Deputy Director of the Academic Affairs Committee of SJTU, Distinguished Advisor to the President of SJTU

Tianshu Ge
Party Secretary

Sun Jin
Executive Dean

Haibo Han
Deputy Party Secretary

Jingchuan Wang
Associate Dean

Weiliang Xia
Associate Dean

Hua Bao
Associate Dean

Features of GIFT

Research

14 Interdisciplinary Research Centers

Dedicated to fostering large-scale, cross-disciplinary innovation across fields.

GIFT Distinguished Lecture Series

GIFT hosts leading global scholars and industry pioneers across fields, such as energy, education, and healthcare. The series serves as a dynamic platform to promote interdisciplinary dialogue, broaden academic perspectives, and inspire innovative thinking among faculty and students.

Figures of GIFT

Academics

2 ppioneering undergraduate programs approved by the Ministry of Education

Sustainable Energy and Health Science and Technology

MD+PhD Dual Doctoral Degree Program

GIFT Future Scholars Program

Five 100%s

100%
undergraduate students being assigned personal academic mentors

100%
participation in real-world corporate practice and research

100%
access to international exchange opportunities

100%
eligibility for scholarships and financial aid

100%
focus on leadership development

GIFT Milestones

GIFT Milestones

2020

- Oct. 12, 2020 – Shanghai Jiao Tong University and Contemporary Amperex Technology Co., Limited (CATL) signed a cooperation agreement to jointly establish the Joint Research Center for Clean Energy Technology.

2021

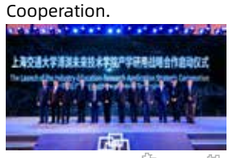
- Apr. 10, 2021 – Dr. Robin Zeng was appointed the SJTU Board of Trustees and donated to establish the Yuqun Zeng Education Foundation.

- Aug. 19, 2021 – Official inauguration of the Global Institute of Future Technology (GIFT).

- Dec. 10, 2021 – The Sustainable Energy undergraduate program was officially approved by the Ministry of Education.

2022

- Feb. 27, 2022 – GIFT hosted the Future Development Forum on Health Science and Technology.
- Nov. 1, 2022 – The Xishan Practice Base in Wuxi, Jiangsu Province, was officially launched.
- Nov. 27, 2022 – Vice Minister of Education, Tiehui Weng attended the Launch Ceremony held by GIFT for Industry Education-Research-Application Strategic Cooperation.



2023

- Feb. 16, 2023 – Vice Minister of Education, Yan Wu visited GIFT to review its development progress.

- Feb. 26, 2023 – The GIFT Future Scholars Program was officially launched.
- May 5, 2023 – GIFT's temporary teaching and research space in the east wing of the Yue-Kong Pao Library was opened.
- July 5, 2023 – Academician Bo Zhang, Honorary Director of the Tsinghua Institute for AI, delivered the inaugural lecture of the GIFT Distinguished Lecture Series.
- Sept. 9, 2023 – GIFT held its first opening ceremony for incoming students at the Yue-Kong Pao Library auditorium.
- Dec. 15, 2023 – SJTU and CATL renewed their strategic cooperation agreement.

2024

- Mar. 7, 2024 – The Health Science and Technology undergraduate program received formal approval.
- Apr. 13, 2024 – The groundbreaking ceremony for the GIFT building was successfully held.

- July 25, 2024 – Dean Jun Ni delivered a keynote address at the Ministry of Education's conference on the development of Future Technology Institutes.
- Oct. 14, 2024 – The CPC Committee of GIFT at SJTU was officially established.

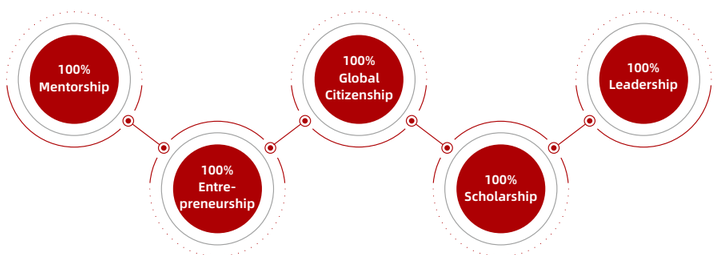
Study at GIFT

Undergraduate Education

Overview

The Global Institute of Future Technology (GIFT) offers two undergraduate programs: Sustainable Energy (SET) and Health Science and Technology (HLT). Designed to address the critical demands of revolutionary advancements in future energy and future health, our undergraduate and graduate programs feature experiential engineering education, transcending traditional disciplinary boundaries and promoting personalized, interest-driven learning. We instill in our students the capacity to conduct independent research and communicate cross-culturally, while equipping them with the strategic insight and global proficiency required to be leaders in their own chosen fields.

The institute continually refines its educational philosophy, building a coherent cultivation system from undergraduate to doctoral level that emphasizes cross disciplinary problem-solving competencies.



Fine Granularity

The program's curriculum strengthens foundational sciences in mathematics, physics, chemistry, biology, psychology, etc., while fostering students' logical thinking, humanistic qualities, and well-rounded development.

Modularization

The curriculum system is divided into five sections: Fundamental Sciences, Interdisciplinary Courses, Humanities and Literacy Courses, Practical Courses and Individualized Courses. Students must complete required credits from each module, ensuring comprehensive intellectual development while allowing for specialization.

Customization

Designed to be interest-driven, the curriculum offers flexibility in academic pathways and degree awarding. With elective courses spanning various specializations, students enjoy greater autonomy to tailor their studies across disciplines.

GIFT Talent Cultivation

Curriculum design **focuses** on the following five aspects: **granular curiculum structure, modular design, practice-driven approach, career alignment,** and **an innovation-centric ethos.** This model **aims** to cultivate **individuals** prepared for key roles in:

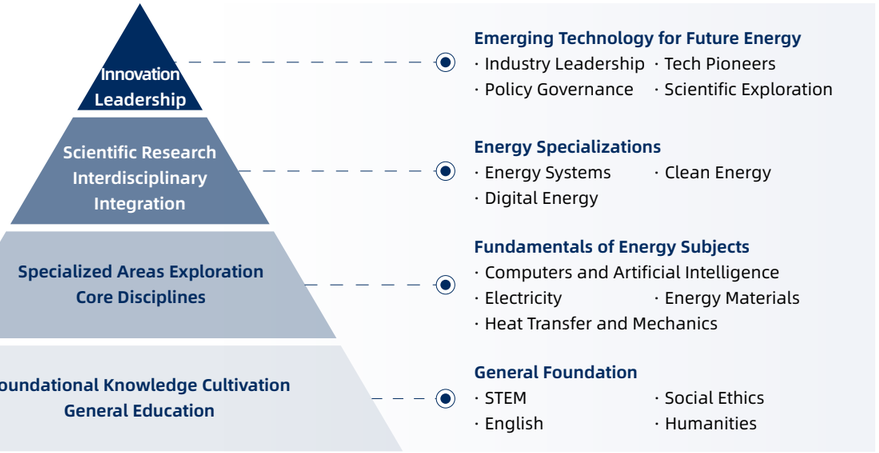
Sustainable Energy: Sustainable Energy Scientist, Energy Systems Architect, Energy Policy Planner, and Energy Sector Entrepreneur

Health Science and Technology: Health Technology Architect, Healthcare Device Innovator, Health Policy Maker, Health Sector Scientist, and Medical-Engineering Integration Leader.

Program Introduction

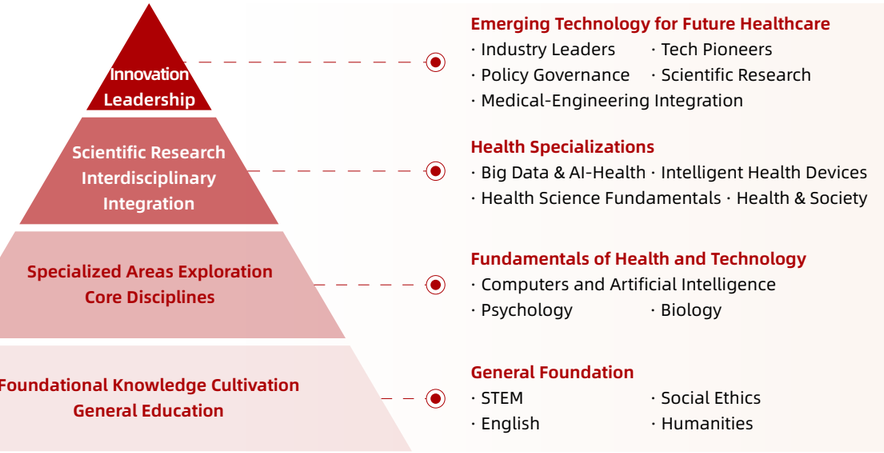
Sustainable Energy（SE）

With the core feature of 'Artificial Intelligence + Sustainable Energy', the program is geared towards the needs of developing new productivity in sustainable energy. By integrating the knowledge of information technology, sustainable energy engineering, mechanical engineering, computer science, electrical & electronic engineering, materials engineering and other disciplines, the program prepares students to become leaders in energy science research, policy-making, system planning, digital energy design and other emerging energy industries.



Health Science and Technology（HST）

With “Artificial Intelligence + Active Health” as its central focus, the program aims to develop innovative solutions for future health and enhance quality of life. Through the cross-integration of information technology, mechanical engineering, material engineering with biology, psychology, genetics, medicine, the program prepares students to become leaders in emerging future health industries, including cardiovascular and brain health, sports medicine, nutritional health, and environmental wellness.



GIFT Future Scholar Program

The Global Institute of Future Technology Future Scholars Program is initiated by the Global Institute of Future Technology and is a student leadership development program for undergraduates at Shanghai Jiao Tong University. This program adheres to the core principle of "student-centeredness" and is committed to shaping undergraduates with a research background in future energy and future health technologies through a doctoral-style training approach. Under the guidance of a multidisciplinary mentors with diverse professional backgrounds, participating students focus on key scientific and technological challenges, engage in interest-driven project research, attend a series of lectures and social practice activities, and cultivate a strong sense of social responsibility and academic passion.

The program launches a new round of projects every spring and fall semester, inviting faculty members from the mentor pool to propose research topics and allowing students to apply independently at the beginning of each term. It adopts a "one-on-one" mentorship model and encourages interdisciplinary and cross-disciplinary research. Each year, the program supports a group of science and engineering students at Shanghai Jiao Tong University who are dedicated to future energy and future health technologies. Each selected student is assigned a faculty mentor in their specialized field and receives funding to support their academic endeavors, research projects, summer exchange programs, and other related activities.

First Cohort of The Global Institute of Future Technology Future Scholar Program - Group Photo of Faculty and Students

Faculty and Students of the College Travel to Xishan for the "Wisdom Gathering in Xishan, Innovating the Future" Research and Practice Activity

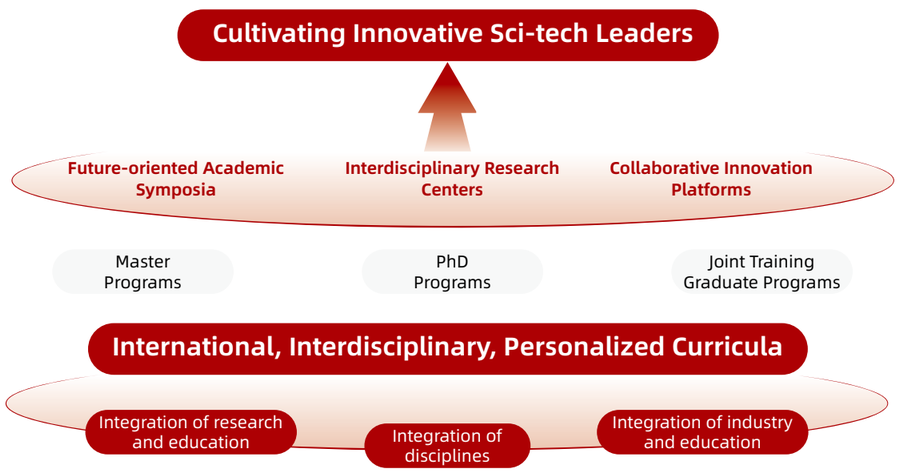
First Cohort of The Global Institute of Future Technology Future Scholar Program - Summary Conference and Launch Ceremony of the Second Cohort

Graduate Education

Overview

GIFT pioneers a comprehensive reform initiative to establish an innovative education system that transcends the boundaries between learning, disciplines, and universities. GIFT graduate programs are designed to cultivate visionary leaders who are devoted to achieving breakthroughs in key and cutting-edge technologies in the fields of future energy and future health. The unique educational experience prepares students to assume leadership roles in the realm of technological and industrial advancement.

GIFT provides a collaborative environment for advanced study, enabling students, faculty, and industry partners to work together to extend the frontiers of knowledge. Graduate education at GIFT places particular emphasis on the relevance of science and technology to the complex problems facing industry and society. We blur the boundaries between disciplines as we seek to solve complex problems, requiring expertise in several different areas.



Features

- Student-centered education with dynamic and open academic atmosphere
- Capability-oriented cultivation with continuous improvement
- Interdisciplinary, collaborative and innovative culture
- Inquiry-driven learning incorporating industry-education synergies
- World-class innovation hub through global collaboration

Graduate Programs

GIFT is committed to maintaining the highest standards of integrity and intellectual and creative excellence. With its diverse interdisciplinary platforms, extensive industrial connections, and comprehensive collaboration mechanisms, GIFT offers a number of interdisciplinary full-time graduate degrees. Part-time graduate programs are also available.

Joint Training Graduate Programs

GIFT offers joint training graduate programs based on its close relationship with industries. By leveraging the strengths of hospitals, enterprises, and universities, we have established industry-academia-research collaboration platforms, upon which several joint training programs have been established, such as the "CATL Joint Training Program" and "United Imaging Joint Training Program". In partnership with these enterprises, graduate students are expected to conduct cutting-edge scientific research and tackle technological challenges.

Admissions for Full-time Programs

Graduate programs are open to applicants from a variety of disciplines, including Mechanical Engineering, Electrical Engineering, Materials Science and Engineering, Power Engineering, Computer Science, Biomedical Engineering, Mathematics, Physics, Chemistry, and Biology, etc.

Part-time Programs

GIFT enrolls part-time doctoral degree students in the field of engineering. These programs are designed to meet the needs of national development strategies.

GIFT has established strong partnerships with leading enterprises, particularly in energy and healthcare sectors, such as CATL and United Imaging. We warmly welcome applicants from partner enterprises.

MD+PhD Dual Doctoral Degree Program

GIFT introduces a MD+PhD Dual Doctoral Degree Program in collaboration with Shanghai Jiao Tong University School of Medicine. Focusing on the convergence of engineering and medicine, this program is designed to cultivate transformative leaders for the advancement of healthcare with global impact.

The program consists of undergraduate studies (Bachelor of Engineering in Health Science and Technology), and graduate studies (a MD degree and a PhD degree). Subsequent to their sophomore year, undergraduate students in Health Science and Technology program may transition to the pre-medical curriculum. This program aims to provide students with a robust foundation in engineering, medicine and interdisciplinary abilities. It provides cross-disciplinary courses, clinical practice courses, rigorous research and clinical training and internships. We are committed to cultivate future leaders with multifaceted competencies through deep integration of medicine and engineering.

Talent Development

Cultivate visionary leaders bridging medicine and engineering

Research Mission

Pioneer groundbreaking theories and disruptive technologies in medical-engineering convergence

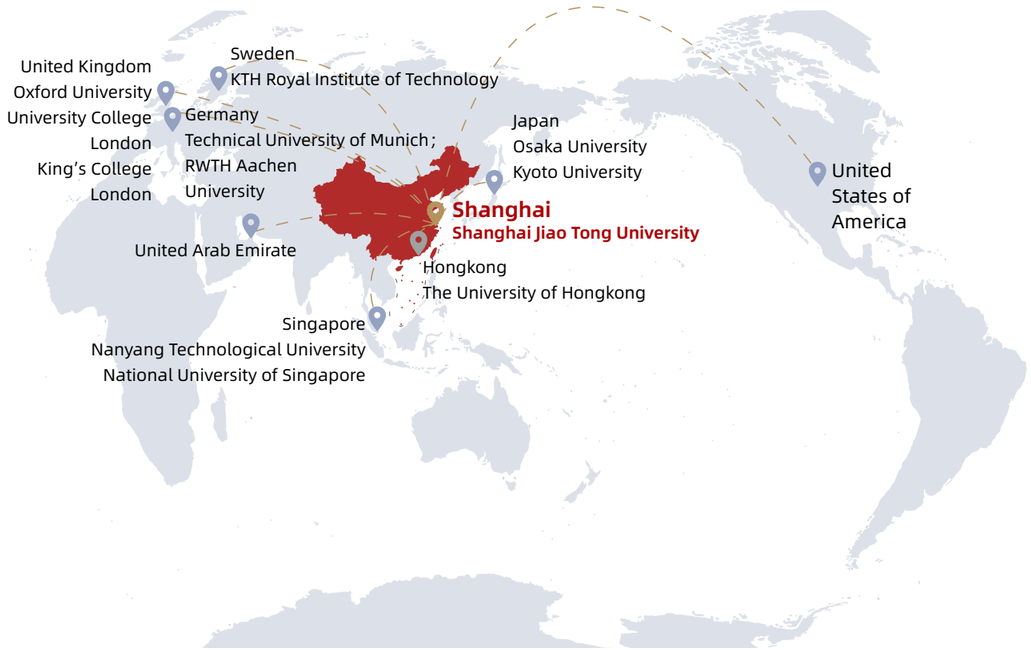
Social Impact

Address critical healthcare challenges and catalyze new productive forces for public health

MD+PhD Dual Doctoral Degree Program

		Course	Medical Training	Scientific Research	International Exchange
UG: Health Science and Technology	Year 1	Humanities Courses Fundamental Courses Practical Courses		Research Seminars	
	Year 2	Humanities Courses Fundamental Courses Practical Courses Interdisciplinary Courses		GIFT Future Scholars Program	Summer School & Semester Exchange
	Year 3	Practical Courses Interdisciplinary Courses Pre-medical Courses	Clinical Exposure		
	Year 4	Practical Courses Introduction to Human Health and Disease		Graduation Project	
MD + PhD	Year 5	Basic Biomedical Sciences (Integrated Organ System-based Courses)		Interdisciplinary Research	
	Year 6	Medical Courses PhD Courses	Clinical Sciences and Skills		
	Year 7		Clinical Rotation		Research & Clinical Internship
	Year 8 | | | Graduation		Integration of Scientific Research Training and Medical Practice Degree Application and Conferment		

Global Cooperation and Exchange



Global Education

With deep roots in China, GIFT embraces global connectivity. GIFT stands at the forefront of technological evolution, driven by a mission to forge a globally integrated innovation ecosystem. Integrating science and education, partnering with industry, transcending disciplines, and leading through innovation, we orchestrate a strategic convergence of education, research, and talent. This triad forms the cornerstone of our strategy to address global challenges and unlock transformative opportunities.

Talent Cultivation

GIFT forges deep collaborations with world-leading universities to integrate premium academic resources. This is manifested through diversified programs including semester exchanges, dual-degree programs, and early admissions. We attract students worldwide through full English-taught degree programs, blending globally recognized curricula with China's technological advancements. Core courses bridge cutting edge innovation with cross-cultural competencies, complemented by mandatory immersive practicums in multicultural environments.

With the goal of 100% internationalized education coverage, every student engages in international programs, from cross-disciplinary workshops to industry-aligned projects led by global experts. We enhance students' international perspectives and cross-cultural leadership, cultivating next generation pioneers equipped with technical expertise and cultural confidence.

Inbound-Outbound Education

GIFT has established a dual-circulation cultivation ecosystem of "Inbound Integration Global Outreach", building up a borderless academic community. We recruit international students at all levels, offering fully English taught degree programs that integrate core curricula bridging global cutting-edge technology, alongside mandatory cross-cultural immersive practice. Concurrently, we encourage domestic students to pursue advanced studies abroad through programs at different levels. Dual degree or joint master/PhD programs are also available as well as non-degree mobility pathways, including summer or winter school, cross-cultural workshop and lectures.

Research

Overview

Guided by the country's major strategic priorities, the Global Institute of Future Technology (GIFT) has established an innovation ecosystem that integrates industry, academia, research, and application. Its research efforts focus on two forward-looking fields: Future Energy and Future Health.

In the area of Future Energy, GIFT focuses on strategic industries such as batteries and photovoltaics. It conducts interdisciplinary research across the full energy technology value chain-from basic science and advanced materials to manufacturing processes, digital systems, and policies. By leveraging technologies like the Internet of Things, artificial intelligence, big data, and cloud computing, the institute aims to drive breakthrough innovations in energy materials, product design, manufacturing, system integration, and application scenarios.

In the area of Future Health, GIFT integrates AI, big data, and virtual reality with bioinformatics, genomics, preventive medicine, and sports translational medicine. Its research explores how genetic, environmental, and public health factors affect life expectancy and aims to uncover health patterns across all life stages-from prenatal development to aging. The institute is committed to advancing disruptive technologies and applications in full-cycle proactive health management.

School-Enterprise Cooperation

- SJTU-CATL Joint Research Center for Clean Energy Technologies
- SJTU-Z-ONE Joint R&D Center for Intelligent Connected Vehicle Technology
- SJTU/GIFT-Siemens Sustainable Technologies Research Center
- Joint Research Center of Thermal and Humidity Management

Research Centers

Innovation Center of Intelligent Connected Electric Vehicles

Overview

Anchored in national strategic priorities, the center advances through interdisciplinary integration and organized scientific endeavors to establish itself as a global hub for academic innovation. Concentrating on the core domains of automotive "new four modernizations" (intelligence, connectivity, electrification, and sharing), it develops a Double First-Class research platform that connects theoretical innovation with industrial application. By consolidating multidisciplinary resources into cross-domain teams, the center has built an open ecosystem for cultivating high-caliber talent. Through strengthened industry-academia-research alliances and enhanced core technology R&D capabilities, it advances transportation strategy.

Research Areas

- Intelligence: Overcoming key challenges in vehicle intelligence.
- Connectivity: Pioneering frontier technologies in V2X connectivity.
- Electrification: Enhancing the efficiency and performance of electric vehicles.
- Sharing: Exploring the technological potential of shared mobility ecosystems.

Center for Advanced Energy System and Reliability

Overview

With a strong interdisciplinary research team, the Center focuses on the frontier scientific challenges on large scale energy storage systems, especially their reliability problems, leads the development of theoretical and practical technologies, solves real problems in energy storage systems, and produces academic achievements with high international influence. To meet the extreme demanding for reliability of large-scale battery energy storage systems in long-term and complex service scenarios such as energy storage power plants, electric aircraft and electric ships, the center takes the lead in building cross-disciplinary technologies and methodologies from the multi-dimensional aspects of materials, battery cells, to systems to support the long term and safe operation of future large-scale battery energy storage systems.

Research Areas

- Failure mechanisms of energy storage systems
- Advanced reliability theory and test methods
- Digital operation and maintenance, intelligent perception and fault diagnosis, life evaluation
- Smart microgrids and energy internet

Future Battery Research Center

Overview

The revolution of battery technologies unlocks new application domains. Today, with a global consensus of reducing carbon footprint, all-electric transportation and large-scale energy storage are rapidly moving to the central stage, but, at the same time, place unprecedentedly high requirements on the energy density, cycle life, cost and safety of secondary batteries. The Future Battery Research Center brings world-leading experts and talents from both academia and industry, focusing on next-generation battery technologies, to prepare our society for the next major leap toward carbon neutrality.

Research Areas

- Fundamental Physical and Engineering Battery Sciences
- Practical Application of Solid-State Lithium Batteries
- Demonstration of Transformative Battery Technologies

Future Photovoltaics Research Center

Overview

The center adopts an interdisciplinary approach to solve key scientific problems in the fabrication and commercialization of perovskite solar cells (PSCs), for making it a truly disruptive technology that can revolutionize the existing photovoltaic field. Starting from investigations into fundamental mechanisms, the center aims for high efficiency, high stability, and high reproducibility of PSCs. We combine cutting-edge characterization methods, advanced simulation theories, aritficial intelligence and novel manufacturing techniques, for creating new solutions, new processes, and new paths to promote groundbreaking innovations towards the realization of high-efficiency and stable perovskite solar cells.

Research Directions

- Mechanistic analysis and long-term prediction of perovskite stability
- Functional and structural design of high-efficiency devices
- AI-design and controllable upscaling of perovskite photovoltaics

Research Center for Green Energy and Future Agriculture

Overview

The center is committed to addressing the global strategic challenges for sustainable development. We carry out the fundamental research on the micro-nanoscale heat and mass transfer mechanisms and also integrates cutting-edge technologies such as big data and artificial intelligence, aiming to achieve breakthroughs in key areas including the efficient conversion and utilization of renewable energy, smart energy management, and the recycling of agricultural resources, thereby providing innovative solutions for building a new energy-water food supply system.

Research Directions

- Efficient Integration and Thermal Management of Energy Systems
- Energy and Environment System in Controlled Environment Agriculture
- Smart Agriculture and Vertical Farming Systems
- Value-added Utilization of Agriculture-derived Biomass

Extreme Manufacturing Research Center

Overview

Our multidisciplinary research team focuses on the 'extremely high efficiency', 'extremely high quality' and 'extremely low cost'. Our center works on the cutting-edge technologies and processes for battery cell, battery pack/module and energy storage equipment. A testing platform will be established to tackle high-performance battery design and smart manufacturing challenges. Additionally, it aims to cultivate high-end talents, and to drive technology upgrades and renovations in the new energy vehicle, energy storage, and photovoltaic industries.

Research Directions

- Battery material structure design
- Key manufacturing process control
- Battery manufacturing quality control
- Pilotscale experiment platform and new technology validation

Research Center for Surface Science and Advanced Materials

Overview

Surface and interface science is the cornerstone of strategic needs in photovoltaics, energy storage, catalysis, and semiconductor technologies. Our center focuses on cutting-edge scientific topics in advanced materials research, and applies surface-interface science and advanced characterization techniques to investigate the correlations between atomic-scale structure and properties in advanced materials. On this basis, we aim to explore the degradation mechanisms of perovskite solar cells and advance industrialization of perovskite photovoltaic technologies; and optimize lithium battery interface to improve next-generation lithium battery technologies; and decode the structure-property relationship of light emitting materials to promote the technology development of next-generation stable and high-efficiency lighting and display devices.

Research Directions

- Surface and Interface Science
- Energy Materials
- Atomic-Resolution Imaging
- Perovskite Solar Cells
- Perovskite LEDs
- Lithium-Ion Batteries
- Organic Electronic Devices

Future Organic Optoelectronics Research Center

Overview

Focused on strategic priorities in energy and healthcare, the center leverages the intrinsic advantages of organic semiconductors—including flexibility, large-area processability, and biocompatibility—to advance optoelectronic technologies through deep interdisciplinary convergence of chemistry, materials science, electronics engineering, and biotechnology. We target to address critical challenges in energy and health sectors, promotes the combination of new technologies and new applicatios, and bridge fundamental research with industrial implementation, delivering scientific support for low-carbon society development and next-generation healthcare innovations.

Research Directions

Green Energy

- Organic photovoltaics
- Organic thermoelectrics
- Organic photocatalysis

Life & Health

- Organic photodetection
- Chemical/Biosignal detection
- Flexible bioelectronics

Future Display Research Center

Overview

The center addresses critical demands in next-generation display technologies. We focus on advancing novel display systems by overcoming key bottlenecks—including Micro-LED mass transfer and full color display—to deliver "Three Highs, One Low" solutions: high precision, high yield rate, high efficiency, and low cost. Our innovations empower applications in high-end displays, smart integrated materials, and flexible solar cells.

Research Directions

- Microchip Fabrication & Surface Molecular Engineering for Novel Displays
- Display Backplane Design and Manufacturing
- Mass Transfer Technology and Microelectronic Device Integration
- Intelligent Detection/Repair and Performance Evaluation of Advanced Displays
- Microscale Collective Intelligence Systems for Integrated Displays

Center for Brain Health and Brain Technologies

Overview

The human brain's remarkable capabilities have shaped civilization and driven technological advancement. Brain health is paramount to our species' future. Our research center combines cutting-edge technologies - from artificial intelligence and brain-computer interfaces to neuromodulation - with insights from psychology and neuroscience. Through this interdisciplinary approach, we investigate neural mechanisms underlying both healthy brain function and neurological disorders, advancing our understanding of brain health while developing innovative neural technologies.

Research Directions

- Brain Mechanisms and Neurological Disorders
- Artificial Intelligence for Brain Health
- Brain-Computer Interface and Neuromodulation
- Space Neuroscience

Center for Future Health and Intelligent Exercise

Overview

The Exercise Translational Medicine Center (ETM)is an interdisciplinary research institute committed to bridging the gap between mechanistic research and its application in human health and clinical practice. Its mission is to advance our understanding of exercise as a therapeutic tool and to refine exercise prescriptions for preventing and treating a broad range of diseases and conditions. ETM fosters innovation by uniting research, technology, and standard development to create a sustainable ecosystem that integrates exercise into medicine. ETM aspires to be a leader in exercise translational medicine.

Research Directions

- Exercise choreography and physiological responses to training
- Application of novel materials and energy metabolism in exercise
- Biological mechanisms and regulatory pathways of exercise interventions
- Artificial intelligence and exercise ecology
- Individual behavior analysis and wearable technology

Human Centric AI Research Center

Overview

The newly established Center on Human-Centric AI (HCAI) at the Global Institute of Future Technology (GIFT), Shanghai Jiao Tong University, is seeking trailblazers at all ranks–from tenured full professors to postdoctoral researchers. This is a unique opportunity to shape the future of technology with an ambitious mission: making life happier, healthier, and more efficient for all. HCAI is pushing the frontiers of sensor technology, pioneering interaction techniques, and revolutionizing robotic applications for use at home and in industry.

HCAI's groundbreaking research focuses on two core areas:

1. Emotioned AI: Advancing the understanding of mental and physical health through non-invasive monitoring, intelligent reasoning, and predictive capabilities. Our goal is to unlock deeper insights into human well-being and enable proactive care solutions.

2. Embodied AI: Enhancing human capabilities directly, allowing individuals to achieve more in ways previously unimaginable, whether through augmenting physical abilities or facilitating complex tasks.

Research Directions

- 3D Vision/Graphics
- Natural Language Processing (NLP)
- Large Language Models (LLMs)
- Extended Reality (XR/VR)
- Robotics/Autonomous Driving

Center for Visual Intelligence and Health

Overview

The Center for Visual Intelligence and Health is dedicated to addressing cutting-edge interdisciplinary challenges at the intersection of visual health and visual intelligence. With a focus on integrating human visual mechanisms and artificial visual systems, the Center aims to pioneer future-oriented frameworks for visual health perception and multimodal intelligence. Leveraging multidisciplinary strengths in artificial intelligence, computer vision, biomedical engineering, and psychophysics, the Center tackles key problems in visual health screening, intervention, and protection. It also advances the development of human-like visual perception, cross-modal cognition, and foundational models. The Center aspires to achieve internationally recognized theoretical breakthroughs and technological innovations, providing a dual foundation for public visual health and next-generation AI systems.

Research Directions

- Intelligent assessment and evaluation of visual health
- AI-assisted diagnosis and treatment in ophthalmology
- Human-machine collaboration and perceptual enhancement
- Multimodal foundation models and human-like vision modeling
- Integrative studies of computer vision and cognitive psychology

Center of Aging and Cancer Research

Overview

The center investigates the mechanisms and patterns of aging and chronic diseases such as cancer from a One Health perspective. Guided by the ASAP framework (Awareness–enhancing public knowledge and accessibility, Screening–early detection and diagnosis, Action–innovative interventions for aging and cancer, Possibility–future-oriented prevention, disruptive technologies, and personalized approaches), the center collaborates with global experts to advance cutting-edge research and cultivate future leaders in the field. In partnership with The First People's Hospital affiliated with Shanghai Jiao Tong University School of Medicine, it co-establishes the "Chronic Disease Prevention and Anti-Aging Health Medicine Research Center", aligning with China's national health strategy and the broader vision of holistic well-being.

Research Directions

- Mechanisms and key regulatory principles of aging
- Pathogenesis and early intervention strategies for chronic diseases, including cancer
- Integrated and innovative approaches to anti-aging
- Novel One Health concepts and methodologies

Cooperation

The Global Institute of Future Technology (GIFT) integrates resources from both within and beyond the university to tackle cutting-edge scientific challenges. With a focus on Sustainable Energy and Health Science and Technology, GIFT delivers forward-looking solutions and cultivates next generation leaders to promote industry progress. GIFT places strong emphasis on industry-academia collaboration and co-educational models. It has established strategic and project-based partnerships with a number of enterprises and institutions.

Cooperation

Partners in Future Energy

Contemporary Amperex Technology Co., Limited (CATL), Advanced Micro-Fabrication Equipment Inc. China (AMEC), Siemens Ltd., China, Huawei Technologies Co., Ltd., Z-ONE Technology Co., Ltd., Jiangsu Josem Environmental Equipment Manufacturing Co., Ltd., Baoshan Iron & Steel Co., Ltd. (Baosteel), Dongfeng Motor Corporation, Aero Engine Corporation of China (AECC), Shenzhen Neware Electronics Co., Ltd. etc.

Partners in Future Health

Shanghai United Imaging Healthcare Co., Ltd., Ruijin Hospital, Shanghai Jiao Tong University School of Medicine, Shanghai General Hospital, Shanghai Jiao Tong University School of Medicine, Shanghai Ninth People's Hospital, Shanghai Jiao Tong University School of Medicine, Shanghai Mental Health Center (SMHC), World Laureates Association Laboratories (WLA Laboratories), China Computer Federation (CCF), etc.

Special Thanks

People’s Government of Minhang District, Shanghai
People’s Government of Xishan District, Wuxi, Jiangsu Province

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People’s Government of Xishan District, Wuxi, Jiangsu Province

Media Influence

The institute strategically advances its media engagement by building a comprehensive, omnichannel communication framework. Through well-designed campaigns and effective execution, GIFT consistently secures exposure on leading mainstream media platforms, leveraging authoritative outlets to build a strong professional reputation. At the same time, the institute is actively innovating in the new media space, developing signature communication IPs to generate multidimensional media resonance. GIFT also continues to expand its global communication channels, ensuring the institute’s vision, initiatives, and achievements reach international audiences and gain global visibility.

Media Coverage

CCTV news

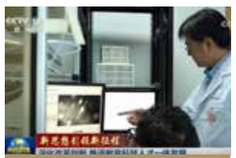
CCTV news

CCTV

Dragon TV

Shanghai Television Station

Education News



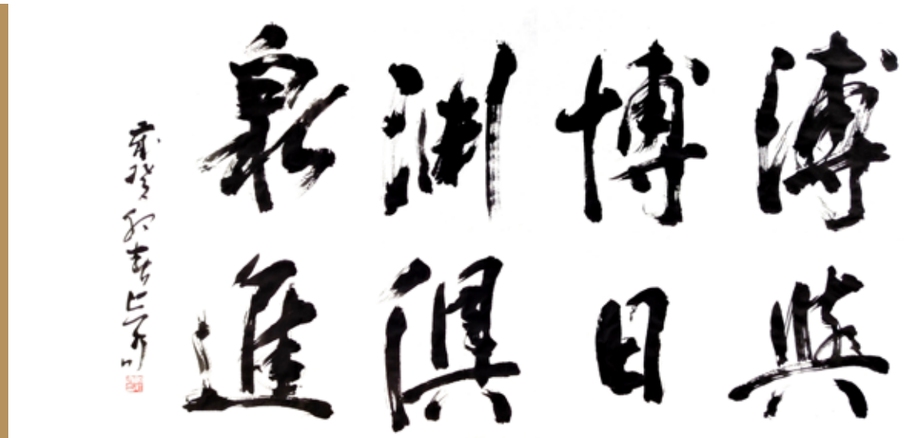
CCTV news

Education News

Media Influence

Moments of GIFT

GIFT



GIFT

Moments

Support us

Twin-Building

GIFT's founding location is located in the East Wing of the Yue-Kong Pao Library on SJTU's Minhang Campus, nestled beside the serene Siyuan Lake. Designed with a forward-looking "Sciences & Arts" concept, the new GIFT building covers a total area of 60,000 square meters. Construction commenced in April 2024 and is scheduled for completion in 2027. Together with the CATL Future Energy Research Institute (Shanghai), it will form a collaborative Twin-Building complex that exemplifies industry academia integration. The Twin-Building is set to become a signature landmark in Shanghai's Grand Neo Bay Global Innovation and Entrepreneurship Community.

Support Us


East Wing, Yue-Kong Pao Library Complex - Administrative Offices


Building 17 by the Freshwater River - Future Health Research Platform


Ruijin Hospital Minhang Campus, Shanghai Jiao Tong University School of Medicine


CATL ABC Building-Industry-Education Integration Demonstration Lab


The 4th Floor of the Green Environment West Building - GIFT Future - X Center

Every act of generosity, trust, and support contributes to the vibrant growth of the Global Institute of Future Technology.
It inspires our students to pursue their dreams and become trailblazers of the future.

Email: gift-giving@sjtu.edu.cn

Support Us

Support Us