

Attachment 1 2019 ZJU Scholars Faculty Profile

Laboratory Name	College/School/Department	Professor	E-mail Address	Telephone No.	Research Area	Project Description	Admission Requirements	Capacity	Weblink
Laboratory of New-Structured Materials	School of Materials Science and Engineering	Prof. Dr. Jian-Zhong Jiang	jiangjz@zju.edu.cn	+86 571 87952107	metallic glass, metallic liquids, phase transition	This research project covers widely aspects of amorphous alloys from synthesis, characterisation to properties. Depending on the candidate's background, one has to further focus on one of metallic glasses and metallic liquids research fields, which could be experiments and/or simulations.	Materials Science and Engineering, Mechanical Engineering, Physics, Computer sciences	no requirement	
Surface Engineering Lab	School of Materials Science and Engineering	Changdong Gu	cdgu@zju.edu.cn	+86 13454164563	coatings;corrosion protection; battery	1. Novel methods for improving the corrosion resistance of magnesium alloys based on the interaction with ionic liquids; 2. magnesium-air battery	passion; interest; chemical or electrochemical background	1	<a href="http://person.zju.edu.cn/en/gcd">http://person.zju.edu.cn/en/gcd</a>
Global climate change modeling group	School of Earth Sciences	Long Cao	longcao@zju.edu.cn	+86 13958037488	Global climate change, Carbon cycle, Climate engineering, Earth system modeling	Global climate change is one of the most challenging problems facing our world today. Climate engineering, also termed as geoengineering, has been proposed as a backup plan to avoid dangerous anthropogenic climate interference. In this project, we will use climate and Earth system models to explore the consequences of geoengineering on global climate and environment.	No	2	<a href="http://person.zju.edu.cn/en/longcao/649774.html">http://person.zju.edu.cn/en/longcao/649774.html</a>
atmospheric aerosol chemistry	School of Earth Sciences	Weijun Li	liweijun@zju.edu.cn	+86 13003650005	individual particle, aerosol sampling, particle compositions, photochemistry, optical properties, aerosol-cloud	Atmospheric chemistry is important to understand aerosol compositions and formation of haze-fog in urban areas. If we understand aerosols, we can know their sources and further provide any strategy to reduce emissions from various sources. Also, we understand mixing state of aerosol particles from different sources, we might know aging process following air mass transport. Based on the results, we can understand optical properties of aerosol particles, particularly, the black carbon in the air which enhance climate change.	No	2	<a href="http://person.zju.edu.cn/en/liwj">http://person.zju.edu.cn/en/liwj</a>
Geographic information science	School of Earth Sciences	Feng Zhang	zfcarnation@zju.edu.cn	+86 13588104219	Spatio-temporal data modelling	Estimating, predicting and conduction of PM2.5 concentrations based on GIS		1	<a href="http://person.zju.edu.cn/en/0007304/669362.html">http://person.zju.edu.cn/en/0007304/669362.html</a>
Key Laboratory of Animal Virology of Ministry of Agriculture	Department of Veterinary Medicine, College of Animal Sciences	Jiyong Zhou	jyzhou@zju.edu.cn	+86 571 88982698	Molecular Virology, Viral Biology and immunology	Isolation of animal viruses from clinical samples, analysis of the biological and genetical characters of variant isolates		1	<a href="https://person.zju.edu.cn/en/0096253">https://person.zju.edu.cn/en/0096253</a>
Key Laboratory of Animal Virology of Ministry of Agriculture	Department of Veterinary Medicine, College of Animal Sciences	Min Liao	liaomin4545@zju.edu.cn	+86 571 88982699-8003	Molecular Virology and immunology	Isolation of animal viruses from clinical samples, analysis of the biological and genetical characters of variant isolates		1	<a href="https://person.zju.edu.cn/en/0009033">https://person.zju.edu.cn/en/0009033</a>
Human and Animal Virology	Department of Veterinary Medicine	Yao-Wei Huang	yhuang@zju.edu.cn	+86 13738104142	Virology, Preventive Veterinary Medicine	Investigation of potential cross-species transmission of an emerging porcine coronavirus	Major in life sciences		<a href="http://person.zju.edu.cn/en/yaoweihuang">http://person.zju.edu.cn/en/yaoweihuang</a>
Power Economic Lab	Electrical Engineering	Zhenzhi Lin	linzhenzhi@zju.edu.cn	+86 15268557283	Power Economics, Big Data Analysis of Power Systems	Demand Response Management Mechanism under Electricity Market	/	2	<a href="http://mypage.zju.edu.cn/en/linzhenzhi">http://mypage.zju.edu.cn/en/linzhenzhi</a>
Smart Mechatronics	Department of Electrical Engineering, College of Electrical Engineering	Zhu Changsheng	zhu_zhang@zju.edu.cn	+86 13857172647	High-speed motors. High-speed flywheel energy, magnetic bearings, active rotordynamics, vibration and noise of motors	High-speed motors. High-speed flywheel energy, magnetic bearings, active rotordynamics, vibration and noise of motors	Ms or PhD	2	<a href="http://person.zju.edu.cn/0092421">http://person.zju.edu.cn/0092421</a>
Power Electronic Device Laboratory (PEDL)	College of Electrical Engineering	Professor	shengk@zju.edu.cn	+86 571 87951345	Power semiconductor devices and ICs	Investigations on high-voltage SiC power MOSFETs and novel super-junction power devices	Students who are interested in power devices	3	<a href="http://person.zju.edu.cn/en/shengkuang">http://person.zju.edu.cn/en/shengkuang</a>
Power Electronic Device Laboratory (PEDL)	College of Electrical Engineering	Research Professor	eesyang@zju.edu.cn	+86 571 87951345	GaN power devices	Investigations on vertical GaN power rectifiers and MOSFETs	Students who are interested in power devices	3	<a href="http://person.zju.edu.cn/en/shuyang">http://person.zju.edu.cn/en/shuyang</a>
Power Electronics Lab	College of Electrical Engineering	Wuhua Li	woohualee@zju.edu.cn	+86 13989801191	power devices, converter topologies and advanced controls for high power energy conversion systems	Common mode voltage/leakage current is the critical issue in PV generation system. In recent researches, the possibility of applying hybrid three level active neutral point clamped converter to the PV system is investigated. Its characteristic of common mode voltage/leakage current has not been revealed which will be covered in this project. Novel modulation schemes to eliminate the common mode voltage/leakage current are going to be developed.	For EE undergraduate/graduate students	1	<a href="http://person.zju.edu.cn/en/woohualee">http://person.zju.edu.cn/en/woohualee</a>
Smart Energy Systems Research Lab	System Science & Engineering Department, College of Electrical Engineering	Qiang Yang	qyang@zju.edu.cn	+86 571 87953296/+86 15167138974	Data-driven and machine-learning techniques in smart energy systems; Cyber-physical systems; Large-scale complex system modelling, simulation, control and optimization.	Security Risk Assessment and Optimal Defense of Electric Distribution Network Cyber-physical System under Cooperative Cyber-attacks. In particular, secure and privacy-preserved system for smart home and neighborhood. We will identify the new cyber security and privacy challenges in the smart neighborhood. Then, we will propose new solutions to defend against cyber attacks.	Good knowledge in programming and mathematics is preferable. Applicants must also be able to demonstrate interest in scientific research.		<a href="http://person.zju.edu.cn/en/qyang">http://person.zju.edu.cn/en/qyang</a>
Renewable Energy Control Technology Lab	System Science & Engineering Department, College of Electrical Engineering	Miao Yu	zjuyumiao@zju.edu.cn	+86 13777467705	Renewable Energy Integration; Smart Distribution Networks; Microgrids.	To get familiar with the control strategies for renewable energy generation equipment, such as PV, wind turbine, etc. To get familiar with the operation control strategies for a medium-size microgrid, and to achieve the simulation study in RT-Lab based platform. To get familiar with the real-time control and communication schemes for a small-size microgrid, and to achieve the experimental study in real platform.	Good knowledge in programming and mathematics is preferable, such as MATLAB/SIMULINK, C#. Applicants must also be able to demonstrate interest in scientific research.		<a href="http://person.zju.edu.cn/en/eeyumiao">http://person.zju.edu.cn/en/eeyumiao</a>
EMD Lab (Prof Shen's Lab of Electrical Machines and Drives)	College of Electrical Engineering, Zhejiang University	Jianxin SHEN	J_X_Shen@zju.edu.cn	+86 13516720885	High-Speed Electric Machines, Low-Speed Electric Machines, Control of Permanent Magnet Machines and Drives, Novel Permanent Magnet Machines, Superior Performance Induction Machines, Wireless Power Transmission, Electromagnetic Transmission of Mechanical Power, Linear Machines and Applications, Energy Harvesting, Renewable and Sustainable Energies, EV & HEV, Electromagnetic Sterilization.	Design and/or analysis of synchronous reluctance machines so as to find appropriate control strategies. Test the machines to validate the appropriate control and to verify the machine performance. Commercial FEM software will be utilized. Test facility existing in the lab can be used and may need modification to suit the required test.	A strong sense of responsibility, mission and knowledge. Great passion of scientific research and thinking. Strictly adherence to academic norms. Basically knowledge of electrical machines.	2-3	<a href="http://mypage.zju.edu.cn/jxs">http://mypage.zju.edu.cn/jxs</a>
Biomaterials for Tissue Repair and Regeneration	Department of Polymer Science and Engineering	Changyou Gao	cygao@zju.edu.cn	+86 13858018768	Biomaterials, biomaterials surfaces, nanobiomaterials, tissue engineering and regenerative medicine, polymer synthesis and formulation.	The sources of research findings include the Natural Science Foundation of China, the Ministry of Science and Technology, the local governments, and industry. Currently, we are focusing on the biomaterials having gradient distribution of signaling molecules, and physical patterning structures, and reactive oxygen species-responsive biomaterials for regeneration of different types of tissues and organs. Supramolecular NPs and colloidal particles are also prepared and used as carriers for drug delivery. Polymer synthesis and characterization, and formulation of different types of materials such as fibers, membranes, scaffolds and hydrogels by methods of emulsion, casting, coating and 3D printing etc. are available. Cell culture in vitro and assay of their properties by qPCR, western blotting and immunochemical analysis etc., and in vivo animal experiments (rats, rabbits and pigs) and analysis of tissue formation are available too.	The candidates (undergraduates, master students and Ph.D students) should have minimum training on lab skills and scientific studies.	2	<a href="http://polymer.zju.edu.cn/biomaterials/English/">http://polymer.zju.edu.cn/biomaterials/English/</a>
Nanopolymer Group	Zhejiang University/Department of Polymer Science and Engineering/Institute of Polymer Science	Prof. Chao Gao	cgao18@163.com/cgao@zju.edu.cn	+86 571 87952088/+86 15058185509	Macroscopic Assembly of Graphene Materials	fabrication of graphene materials including fibers, films, non-woven fabrics, and aerogel millispheres. All these graphene macroscopic materials were found holding great potential in various applications, such as wearable multifunctional textiles, lightweight conductors, energy storage, electromagnetic shielding and efficient absorber materials. There are two directions that can be provided for you to practice: first, carbon aerogels are used as three-dimensional (3D) ink-printing technique; second, ultra-flyweight carbon aerogels.	1. Having great interests in graphene materials. 2. Having the experience of research work. 3. Having strong ability to adapt to the new lab environment.	2	<a href="http://polymer.zju.edu.cn/gc/index.php?c=English">http://polymer.zju.edu.cn/gc/index.php?c=English</a>
	School of Public Affairs	Yuehua ZHANG	zhangyuehua@zju.edu.cn	+86 13868130078	Health Economics, Agricultural Finance, Development Economics	Health Economics, Rural social securities, Agricultural insurance	Statistics, economics, agricultural economics	English and field survey	<a href="http://person.zju.edu.cn/en/zhangyuehua">http://person.zju.edu.cn/en/zhangyuehua</a>

Laboratory Name	College/School/Department	Professor	E-mail Address	Telephone No.	Research Area	Project Description	Admission Requirements	Capacity	Weblink
Biomedical Photonics Lab	College of Optical Science and Engineering	Ke Si	kesi@zju.edu.cn	+86 571 88981772	Biophotonics, Optical microscopy, Optogenetics, Deep tissue imaging and focusing, Adaptive Optics	Optical microscopy has revolutionized biological research during the past few decades. A lot of work has been done to improve its resolution and imaging speed. However, its imaging depth is quite limited due to the scattering. Nowadays, brain science research is the crown of biological science, which requires in-vivo high-resolution optical imaging in deep tissue. We are developing deep tissue imaging and focusing techniques, and then apply them to neuroscience to analyze neural circuits and control neuronal activity.	1. Have a certain optical basic knowledge 2. Good academic reading and writing skills	Responsible, with certain optical knowledge, good cooperation ability, communication skills, hands-on ability	<a href="http://mypage.zju.edu.cn/kesi">http://mypage.zju.edu.cn/kesi</a>
	Guanghua Law School	JIN Chengdong	jchdong@zju.edu.cn	+86 18757101292	Comparing Study on Administrative Law	Comparing study on Chinese administrative law with American administration law	JD students of law schools in USA	2	<a href="http://www.gns.zju.edu.cn/english/redir.php?catalog_id=48332&amp;object_id=65012">http://www.gns.zju.edu.cn/english/redir.php?catalog_id=48332&amp;object_id=65012</a>
Laboratory of Graphene Mechanics	School of Aeronautics and Astronautics	Pei Zhao	peizhao@zju.edu.cn	+86 13588299682	two-dimensional materials	Synthesis, characterization and simple mechanical testing of graphene and other two-dimensional materials	Know basic experimental skills in a lab	2	<a href="http://www.xmecz.zju.edu.cn">www.xmecz.zju.edu.cn</a>
Key Lab of Soft Machines and Smart Devices	School of Aeronautics and Astronautics/Department of Engineering Mechanics	Shaoming Qu	squ@zju.edu.cn	+86 571 87952024	Soft Robots, Mechanics of Soft Active Materials, Composites	To develop soft robots made of soft active materials. To prepare high performance biocompatible hydrogels and composites.	Science and Engineering background	2	
Laboratory of control of smart structures	School of Aeronautics and Astronautics/Institute of Applied Mechanics	Kuochih Chuang	chuangkc@zju.edu.cn	+86 13967127543	Metamaterials/phononic crystals	Shape memory alloy-based tunable elastic metamaterials/FEM analysis/experiments	vibration or elastic wave background, acoustic or sound is also welcome	1	<a href="http://person.zju.edu.cn/cchuangkc">http://person.zju.edu.cn/cchuangkc</a>
Functional Polymer	College of chemical and biological engineering	Li Wang	opl_wl@zju.edu.cn	+86 571 87953200	1. Optical, electrical, magnetic functional polymer, stealth and antibacterial polymer material; 2. Synthesis and self-assembly of block polymers, hyperbranched polymers and dendrimers ; 3. Preparation of nanomaterials and nanopolymer coating; 4. Study of novel catalysts for olefin polymerization; 5. Adhesive, radar absorbing and electro-magnetic shielding functional coating, leather additive.	Microneedle patches for delivery of insulin for the treatment of Diabetes patients will be designed and prepared. The effect of the structure of microneedle patches on their insulin delivery property will be studied. The insulin delivery mechanism of the microneedle patches will be exposed and their application will be studied.	The students in polymer science, chemistry, material science, chemical engineering and related majors	2	<a href="http://sklpre.zju.edu.cn/ktxzzen/redir.php?catalog_id=16755&amp;object_id=17130">http://sklpre.zju.edu.cn/ktxzzen/redir.php?catalog_id=16755&amp;object_id=17130</a>
Functional Polymer	College of chemical and biological engineering	Haojie Yu	hjiyu@zju.edu.cn	+86571 87953200	1. Study on novel epoxy compounds 2. Study on polymer-based nanocomposites 3. Study on ferrocene-based compounds and polymers 4. Study on functional coatings	Glucose-responsive two-component polymer hydrogels will be designed and prepared by host-guest assembly of $\beta$ -cyclodextrin-based host hydrogels and ferrocene-based guest hydrogels. The novel synthesis route and method will be studied. The effect of the structure of two-component polymer hydrogels on their glucose-responsive property will be studied. The glucose detection mechanism of the glucose-responsive two-component polymer hydrogels will be exposed and their application in novel glucose detection devices will be studied.	The students in polymer science, chemistry, material science, chemical engineering and related majors	2	<a href="http://sklpre.zju.edu.cn/ktxzzen/redir.php?catalog_id=16755&amp;object_id=17132">http://sklpre.zju.edu.cn/ktxzzen/redir.php?catalog_id=16755&amp;object_id=17132</a>
State Key Lab of Chemical Engineering	College of Chemical and Biological Engineering	Wen-Jun Wang	wenjunwang@zju.edu.cn	+86 13738171934	Advanced polymer materials, Polymer reaction engineering	<b>Synthesis and characterization of covalent organic framework (COF) materials:</b> the COFs are emergent nanoporous organic solids with pure honeycomb crystal structure and robust covalent linkage between building units. Two-dimensional (2D) COF flakes with a high degree of crystallinity and versatile functionalities promise lightweight materials for diverse applications. However, most reported COFs are in forms of sphere with a relatively low degree of crystallinity. How to control the crystallinity and morphology of the COFs will be focused.	Junior or Senior in chemical engineering/ chemistry	1-2	<a href="http://sklpre.zju.edu.cn/ktxzzen/redir.php?catalog_id=1308&amp;object_id=52071">http://sklpre.zju.edu.cn/ktxzzen/redir.php?catalog_id=1308&amp;object_id=52071</a>
Bioprocess Engineering	College of Chemical and Biological Engineering	Dong-Qiang Lin	lindq@zju.edu.cn	+86 571 87951982	Bioseparation, materials science, molecular simulation, bioprocess design	Modern biotechnology industries heavily depend on the availability of efficient bioseparation processes. The developments of novel bioseparation platform are essential and challenging. Our research focuses on the new resins, novel methods and robust bioprocesses for pharmaceuticals manufacturing, including expanded bed absorption, mixed-mode chromatography, continuous chromatography and so on, which could certainly reduce the separation steps, enhance the ability for large-scale operation, as well as improving the separation efficiency and reducing the cost.	Majors in Bioengineering, Chemical Engineering, Materials Science or Computer Science.	1~2	<a href="http://person.zju.edu.cn/en/0098032/">http://person.zju.edu.cn/en/0098032/</a>
Synthetic Metabolic Engineering Lab (SMEL)	Chemical and Biological Engineering	Jiazhang Lian	jlzian@zju.edu.cn	+86 18867541819	Biochemical Engineering, Synthetic Biology, Metabolic Engineering	The Synthetic Metabolic Engineering Lab (SMEL) focuses on the construction and optimization of cell factories using metabolic engineering and synthetic biology approaches, with particular interests in the development and application of CRISPR/Cas based genome engineering tools.	Background and interests in bioengineering, biochemical engineering, biotechnology, microbiology, molecular biology, or environmental biotechnology	1-2	<a href="http://person.zju.edu.cn/lianlab">http://person.zju.edu.cn/lianlab</a>
Electrochemical Engineering Lab	College of Chemical & Biological Engineering	Min Ling	minling@zju.edu.cn	+86 18757588870	Polymer Science, lithium ion/sulfur batteries	Current focus on polymer composite technology for advanced energy systems. Develop new polymers, composite materials and structures, and perform structure-function relationship study of the materials and interfaces to understand their fundamental properties in the energy conversion systems. Apply this broad based knowledge of the composite system to improve the performance of energy conversion systems, in particular lithium ion batteries.	polymer and battery background	5	
Air Pollution Control Lab	Chemical & Biological Engineering	Yi He	yihezj@zju.edu.cn	+86 17764518129	Computer Simulation; Air Pollution Control	Understanding the Oxidation Mechanism of Aromatic Hydrocarbon in External Electric Fields with Molecular Simulations	Majors Chemical Engineering	1	<a href="http://mypage.zju.edu.cn/yihe">http://mypage.zju.edu.cn/yihe</a>
Teaching Building 10 Room 3113	Chemical and Biological Engineering	Mingqiao Zhu	zhumingqiao@zju.edu.cn	+86 571 89752554	Organic green oxidation, nano catalysis, process intensification, micro channel and tube reaction, environmental catalysis, green separation	Preparation of nano gold hybrid catalysts/functionalized hybrid catalysts and its application in hydrocarbons selective oxidation During the last two decades the rapid growth of nanoscience has led to important developments in physical and chemical technologies by offering advanced tools for arranging atoms in specific molecular and supramolecular structures. From the progress of this field, gold catalysis has derived benefits for tailoring solid nanostructured surfaces showing unsuspected catalytic properties in organic synthesis and environmental control. In fact, the application of gold in catalysis only became an important research area several years after the first reports on its catalytic potential for ethylene hydrochlorination developed by the impressive work of Hutchings' group and CO oxidation developed by the impressive work of Haruta' group, and it is now considered an active promoter of many fundamental reactions for organic synthesis such as oxidation and hydrogenation. As a consequence, new applications of gold have been proposed for commercial syntheses by both academic and industrial researchers. Selective oxidation of natural resources is a task of key importance for producing oxygenates to be employed as building blocks in chemical processes that range from kilogram-scale applications in pharmaceuticals to thousand tonne-scale in chemicals. Our research topics are as follows: -Cyclohexanone oxidation to $\epsilon$ -caprolactone over functionalized hybrid catalysts -Cyclohexene epoxidation to cyclohexene oxide over supported nano gold hybrid catalyst Through the research training, you will learn how to prepare, characterize and evaluate the catalysts, and you will understand chemical technologies well.	Major: chemical engineering, chemistry, or material science.	5	<a href="http://mypage.zju.edu.cn/zhumingqiao">http://mypage.zju.edu.cn/zhumingqiao</a>

Laboratory Name	College/School/Department	Professor	E-mail Address	Telephone No.	Research Area	Project Description	Admission Requirements	Capacity	Weblink
functional polymer	Chemical Engineering & Biological Engineering	Zhen Yao	yaozhen@zju.edu.cn	+86 571 87951832	polymeric materials, chemical engineering	With the frequent occurrence of crude oil leaking at sea, the extensive implementation of secondary oil recovery and the large-scale production of oily wastewater, oil-water separation technology has become one of the key measures to ease the environmental crisis and reduce energy waste. Aerogel membrane can be used as a filter medium to separate oil-water mixture efficiently and continuously. In the existing research, either organic solvents or cooking oil are used as the oil phase. The influence of the complex components, such as asphaltene and paraffin in the real crude oil, has not been considered. This project will focus on the mixture of water and waxy crude oil with high asphaltene content, and study the mechanism of how the emulsification of water droplets and oil droplets caused by the amphiphilic property of asphaltene, the precipitation of asphalt particles and the presence of paraffin components on the oil-water separation using aerogel membranes. Flowability improver of crude oil will be synthesized to stabilize asphaltene and paraffin simultaneously, weaken the emulsification effect of asphaltene, reduce the influence of asphaltene precipitation, and decrease the size of paraffin crystal. At the same time, the pore structure of aerogel membrane, the underwater oleophobicity and the hydrophobicity in oil are manipulated. The combination between the aerogel membrane and the flowability improver will be optimized to construct a suitable process for high-efficiency and continuous separation of asphaltene-paraffin crude oil / water mixture.	3rd,4th year undergraduate students or graduate students	1-2	
Zuojun Wei's Lab	Chemical and Biological Engineering Department	Zuojun Wei	weizuojun@zju.edu.cn	+86 13588810769	Catalyst design and Green catalysis	In order to design a heterogeneous catalyst with high performance, we should try to understand the interaction among the active sites, support surface, and the structure of the substrates. This can be partly accomplished by DFT calculation, and partly by the understanding the properties of the metals and supports to be used. While a catalyst is produced, we will characterize it by modern physical techniques and evaluate its performance by some model reactions in the biomass transformation field.	undergraduates and graduates in chemical engineering department	1	none
Supramolecular Chemistry	Department of Chemistry	Feihe Huang	fhuang@zju.edu.cn	+86 571 87953189	Supramolecular chemistry	Supramolecular materials, amphiphiles, self-assembly, nonporous adaptive crystals for adsorption and separation	The candidates have published at least two first-authored research papers and are good at written and spoken English.	2	<a href="http://www.chem.zju.edu.cn/~huangfeihe/index.php">http://www.chem.zju.edu.cn/~huangfeihe/index.php</a>
MOE Key Laboratory of Environment Remediation and Ecological Health	College of Environmental & Resource Science	Shengke Tian	tiansk@zju.edu.cn	+86 15700123781	phytoremediation and biofortification	(1) Mechanisms of metals transportation, remobilization and loading into rice grain. To reduce the content and bioavailability of heavy metals in rice grains to protect human health and well being. (2) Mechanisms of cellular and vacuolar sequestration of metals in hyperaccumulator plants. To improve our understanding of plant heavy metal tolerance mechanisms as to facilitate phytoremediation of heavy metals contaminated soils. (3) Localization and transport of micronutrients in crops. To optimize the utility of foliar fertilizers as a means to maximize productivity and environmental sustainability of agricultural species, and also for the biofortification of micronutrients in crops. (4) Optimized fertilization and agricultural management of fruit plants.	1. Education background: Agricultural Science/Environmental Science/Molecular biology; 2. English level: have a good skill of spoken English, and be able to write academic paper. 3. Priority will be given to the students with Publications.	5	
Lab of wastewater treatment science and echnology	College of Environmental & Resource Science	He-Ping Zhao	zhaohp@zju.edu.cn	+86 571 88982739	Environmental Biotechnology, Wastewater treatment	resource and energy recycle in wastewater treatment	basic knowledge in microbiology and environmental chemistry	1	<a href="http://person.zju.edu.cn/en/zhaoheping">http://person.zju.edu.cn/en/zhaoheping</a>
State Key Laboratory of Fluid Power and Mechatronic Systems	Mechanical Engineering	Huayong Yang Yi Zhu	yiz@zju.edu.cn	+86 18694580181	Metal additive manufacturing based design and application	1.Design of high fatigue (wear) resistant materials using additive manufacturing 2 Additive manufacturing based machine design	1. Background in mechanical engineering or material science or related 2. Third or forth year undergraduate students or graduate students	1 basic knowledge in mechanical engineering or material science; 2 Interested in additive manufacturing	<a href="http://person.zju.edu.cn/yiz">http://person.zju.edu.cn/yiz</a>
The State Key Lab of Fluid Power & Mechatronic Systems	Mechanical Engineering	Yang Canjun	ycj@zju.edu.cn	+86 571 87951271-6318	Mechatronic Devices and Technology for Deep-sea Exploitation , Man-machine Intelligent Mechatronic System	Professor Yang Canjun promoted "Submarine Observation Network Junction Boxes and Communication Technology", "Deep-sea Extreme Environment Detection Technology", "Technology for Sampling Deep-sea High-fidelity Hydrothermal Fluids", "Deep-sea Contactless Power and Signal Transmission Technology", and "Underwater Robot Technology". He proposed the "Theatrical Methods for Man-machine Integration", "Teleoperation Control for Upper-extremity Exoskeleton", "Technology for Augmenting Lower-extremity Exoskeleton", and "Robotic Technology for Medical Rehabilitation Exercise Exoskeleton".	Interested in related research areas, and have good scientific research ability.	2	<a href="http://sklofp.zju.edu.cn/SKL/en/index.php?a=shows&amp;catid=13&amp;id=32">http://sklofp.zju.edu.cn/SKL/en/index.php?a=shows&amp;catid=13&amp;id=32</a>
State Key Lab of CAD&CG	College of Computer Science and Technology	Xiaowei Zhou	xzhou@cad.zju.edu.cn	+86 15715705388	computer vision, robotics	3D scene reconstruction and understanding	Abilities in math and programming	3	<a href="http://www.cad.zju.edu.cn/home/xzhou/">http://www.cad.zju.edu.cn/home/xzhou/</a>
Digital media Computing & Design Lab	College of Computer Science and Technology	Yin Zhang	zhangyin98@zju.edu.cn	+86 13136157369	Information Retrieval, Dialogue System, Deep Reinforcement Learning	Developing information retrieval/dialogue systems that are capable of answering complex information needs by collating relevant information from a large number of documents with automatic passage retrieval, consolidation, and organization.	Major: Computer Science	1	<a href="http://mypage.zju.edu.cn/en/zhangyin">http://mypage.zju.edu.cn/en/zhangyin</a>
Computer aided product innovation design engineering and research center, Ministry of Education	College of Computer Science and Technology	YAO Cheng	yaoch@zju.edu.cn	+86 13588029460	Human-Computer Interaction, Design Thinking, Interaction Design, Industrial Design, Product Design, Service Robot	Integration Design: The project is focusing on the applications of technologies that could be integrated together, The purpose of the application is aiming at the market by designing the user experience and business strategy.		3	
Real Doctor AI Research Centre	College of Computer Science and Technology	Wu Jian	wujian2000@zju.edu.cn	+86 13819170001	Medical Imaging/Medical AI/ Natural Language Processing	process medical images/do some research on medical AI	good computer fundamentals/familiar with machine learning/good coding skills	2	
State Key Lab of CAD&CG	College of Computer Science and Technology	Hongzhi Wu	hwu@acm.org	+86 571 88206681-425	Computer Graphics	Digital Acquisition of Objects, to be submitted to ACM SIGGRAPH / SIGGRAPH Asia, the top conference in computer graphics	Strong background in coding, some background in computer graphics/ machine learning / interdisciplinary study is a plus.	1	<a href="http://www.cad.zju.edu.cn/home/hwu/">http://www.cad.zju.edu.cn/home/hwu/</a>
Learning and Cognitive Science Laboratory	College of education	Qinmei Xu	xuqm@zju.edu.cn	+86 571 88276131	Individual Differences in infants; Parenting and Attachment; Emotion Understanding; Early Word Learning; Child Care and Social Policy ; Sleeping;Critical thinking	We mainly focus on mind development, especially of those age 0 to 18 from infants to adolescents. We are interested in learning mechanism and how learning environment influence.	(1)research interests : early childhood development, learning and sleeping, over parenting, intelligent tutoring system(ITS), critical thinking training of teenagers(2)related majors : psychology, education, neurosciences, computer science , social sciences, linguistics(3)with experience in eyetraking ,PSG,EEG experiments is preferred	3	<a href="http://person.zju.edu.cn/en/xuqinmei">http://person.zju.edu.cn/en/xuqinmei</a>

Laboratory Name	College/School/Department	Professor	E-mail Address	Telephone No.	Research Area	Project Description	Admission Requirements	Capacity	Weblink
Lab of Network Sensing and Control	College of Control Science and Engineering	Jiming Chen	cjm@zju.edu.cn	+86 571 87953762	Big Data	Bike-Sharing Systems (BSS) provide a convenient and environmental-friendly way of transportation and become popular worldwide. We have collected over 100 million usage records in Hangzhou BSS, which is one of the largest BSS. In this project, we will focus on data-driven BSS traffic optimization, user navigation, system infrastructure design and related problems.	Familiar with Python Programming; Basic knowledge of Machine Learning/Data Mining;	2	<a href="http://www.sensornet.cn/">http://www.sensornet.cn/</a>
Microfluidics and Soft Matter Lab	School of Energy Engineering	Dong Chen	chen_dong@zju.edu.cn	+86 13858113412	Microfluidics and Soft Matter	Our group mainly focuses on microfluidics and soft matter.	We welcome students who major in Physics, Chemical Engineering, Mechanical Engineering, Material Science or other related disciplines to join our group.	Communicate with others in English and work with others as a team	<a href="https://zjumicrofluidic.wixsite.com/chendonglab">https://zjumicrofluidic.wixsite.com/chendonglab</a>
Human, Mobility and Automation Research Group	Inst. Vehicular Engineering, College of Energy Engineering	Daofei LI	dfli@zju.edu.cn	+86 15990014454	a)Automated Driving Vehicle for safety and efficiency; b)Human Automation Interaction; c)Smart Electric Vehicles;	This is a multi-discipline project on Automated Driving Vehicle (ADV). We have two main topics for you to participate: (A) Automated Driving algorithms, including but not limited to Sensing, Planning and Decision, and Motion Control, based on optimization / machine learning. Our lab is equipped with one-million-USDollar-worth facilities, ranging from Lidars, motion simulators, to an automated electric vehicle. (B) ADV and Human Interaction, e.g. how human drivers operate or interact with ADV, how ADV can handle the passenger motion sickness issue, how other road users interact with ADV. Our lab is equipped with Human Factors instruments, e.g. MP160, BioSemi EEG recorder, ETG eyetracker, etc.	Students with Engineering /Psychology/Behavioral Science/Urban Planning backgrounds are welcome. Contact me for details. A)For Engineering students, hope you possess some basic abilities to simulate system dynamics (e.g. the human-vehicle system).it is better that you have some experience on Python or Matlab, or Robot Operating System (ROS). C)For Humanities students, hope you are open enough for cooperation with Engineering minds.	2	<a href="http://person.zju.edu.cn/en/daofei">http://person.zju.edu.cn/en/daofei</a>
NEMT(New Energy and Mechatronics Team)	Energy Engineering College	Xiong Shusheng	xiongss@zju.edu.cn	+86 18806785055	The main research interests include : (1) Vehicle diversified energy; (2) Recycling garbage and biomass utilization; (3) New-energy vehicle energy management system and key components; (4) Car networking and industrial IoT.	This project is used in an unattended parking permission management system. Geomagnetic sensor, NB-IoT, 125K and 2.4G dual-band radio frequency identification are combined to achieve the non-contact automatic recognition for the car's identity. To identify the vehicle parking form accurately, it is important that the position of the front and back low-frequency exciters are arranged properly.	1,have basic knowledge of electronic,MCU,and C code; 2,Be familiar with PCB layout or C programming; 3,Good communication skills;	1	
State Key Laboratory of Clean Energy Utilization	School of Energy Engineering	Menglian Zheng	menglian_zheng@zju.edu.cn	+86 15268515585	Energy storage and intelligent energy system	My research focuses on three different aspects of flow batteries and energy systems, including (1) storage dispatch strategies to enable intelligent energy systems; (2) flow field design and mass transfer enhancement of redox flow batteries; (3) structure and system optimizations for non-aqueous flow batteries. A brief description of each can be found in the attached bio.		2	
Microfluidics and Soft Matter Lab	School of Energy Engineering	Dong Chen	chen_dong@zju.edu.cn	+86 13858113412	Microfluidics and Soft Matter	Our group mainly focuses on microfluidics and soft matter.	We welcome students who major in Physics, Chemical Engineering, Mechanical Engineering, Material Science or other related disciplines to join our group.	Communicate with others in English and work with others as a team	<a href="https://zjumicrofluidic.wixsite.com/chendonglab">https://zjumicrofluidic.wixsite.com/chendonglab</a>
	School of Humanities	Yi WANG	ynw@xixilogic.org	+86 18058798208	1. Modal Logic 2. Logics for Agents and Multi-Agent Systems 3. Logic and Social Networks 4. Logic and Argumentation	1. Logics for social networks: the main idea of this project is to (partially) replace the statistical methods that are widely used in social network analysis (SNA) with logical methods, as there are situations where the former does not work so well. Tasks involve (but are not limited to): Model and reason about social networks using logical methods; Apply logical theories and methods in SNA; Implement the resulting logics (e.g., writing model checkers in programming languages) 2. History of logic in China: we study old texts which form the history of logic in China, including <i>Mozi</i> , <i>Gongsunlongzi</i> , old texts that contain methods of argumentation, early modern comparisons of Chinese and western logic, etc. We aim at representing Chinese logic systematically.	Prior knowledge in relevant fields. Namely, logic, mathematics, computer science, sociology or social psychology (Project 1) History of logic, Chinese philosophy or Chinese culture (Project 2)	2	<a href="http://www.xixilogic.org/ynw/">http://www.xixilogic.org/ynw/</a>
	School of Humanities	Wenlei SHI	wenleishi@zju.edu.cn	+86 13486145778	History of Chinese language; The evolution of motion expressions in Chinese	I am currently working on two interrelated projects. The first is motion expressions in the history of the Chinese languages in a typological perspective. As we know, motion is one of the basic cognitive domains for human being. Its linguistic encoding strategies are diversified across languages. An interesting question that raise up is that how a language interacts with its speaker's thinking while depicting a motion scene? What I work on is to find out the diachrony of motion expressions in the history of Chinese and its synchrony across modern Chinese dialects. The second project is about the grammaticalization in Chinese. What this project is addressed on is to find a fine-grained way to test grammatical status alongside the grammaticalization paths. I mainly use the data from Chinese.	basic linguistic training; Chinese fluent	1	<a href="http://person.zju.edu.cn/en/wenleishi">http://person.zju.edu.cn/en/wenleishi</a>
Cultural heritage digitization lab	School of Humanities	Xia ZHENG	zhengxia@zju.edu.cn	+86 13867173578	Digital Museum, Cultural Heritage Digitization	(1) Research on manufacturing process of the original celadon;(2)Building the database;(3)Exhibition Design on App.	Basic knowledge on database,should be interested in Chinese culture.	1	
Lithic Analysis Lab	School of Humanities	Hong CHEN	hollychen@zju.edu.cn	+86 13646871136	Paleolithic archaeology, use-wear analysis	This project is designed for the students (including students oversea) to understand chinses paleolithic archaeology and take part in case studies in lithic study on the basis of our lab mainly. We also probably provide opportunites to visit and/or do volunteer work in some chinese archaeological sites.	MA/PhD students, have basic knowledge of archaeology	2	
	School of Humanities	Minzhen LU	lumz@zju.edu.cn	+86 13735820912	History of Song Dynasty,Chinese Intellectual History, Local History	Family rituals and Confucianism in imperial China	Basic knowledge on Chinese history	1	
	School of Humanities	Xuping LI	xupingli@zju.edu.cn	+86 13968193171	Formal semantics, comparative syntax of Chinese dialects in the formal framework	Chinese is an article-less languages, where (in)definite articles are not found.We are interested in finding out what are the possible syntactic strategies of encoding definiteness in this language and how the notion of definiteness can be understood precisely.	the candidate must have background in formal syntax or semantics.	1	<a href="http://mypage.zju.edu.cn/en/xp">http://mypage.zju.edu.cn/en/xp</a>
	School of Humanities	Cheng WANG	wangchengzju@gmail.com	+86 13858180914	Chinese Philology, Chines intellectual history	1.Junzi in the Chinese culture: Analyse the image and personality of Junzi, in contrast with other similar western concepts (e.g. gentlemen) 2.Chinese classics in the English-speaking world: Evaluate the translation and acceptability of traditional Chinese classics in western society (e.g. classic literature of Confucianism, Buddhism and Daoism) 3. Chinese compound words:Analyse the structural relations of Chinese compound words and the motivation, as well as the evolution of their meanings; Compare and contrast compound words in Chinese and western context.	basic knowledge of Chinese and interested in Chinese culture	1	<a href="http://person.zju.edu.cn/en/samuel">http://person.zju.edu.cn/en/samuel</a>

Laboratory Name	College/School/Department	Professor	E-mail Address	Telephone No.	Research Area	Project Description	Admission Requirements	Capacity	Weblink
	School of Humanities	Davide Fassio, Jie Gao, Kristjan Laasik	davidefassio@gmail.com; philobaikal@gmail.com; klaasik@gmail.com	+86 1582231127; +86 13429685640; +86 15953249746	Epistemology, Philosophy of Perception, Philosophy of Mind and Cognition, Rational Theory	The project aims to investigate issues concerning the rationality of perception and belief. It will focus on the following and related topics: i) whether there are standards of rationality for perception, and if so, what these standards are; ii) whether the conditions of rationality of outright belief and degrees of belief are determined exclusively by features related to evidence and accuracy, or also depend on other factors such as cognitive and environmental limitations; iii) how rationality standards of perception and belief are related. We will provide students with the supervision and tools necessary for mastering the relevant literature, engaging in philosophical inquiry and writing original research on the topics of the project.	We welcome all candidates interested in the topics of the project. Background knowledge and training in philosophy, in particular in philosophy of mind and epistemology, are preferred.	1-2	<a href="https://sites.google.com/site/davidefassio/">https://sites.google.com/site/davidefassio/</a> ; <a href="https://jiegaoophil.weebly.com/">https://jiegaoophil.weebly.com/</a> ; <a href="https://zju.academia.edu/KristjanLaasik">https://zju.academia.edu/KristjanLaasik</a>
The Molecular Biology of Chemosensation	College of Life Sciences	Liquan Huang	huangliquan@zju.edu.cn	+86 571 88981755	Olfactory/gustatory signaling proteins and their physiological roles	Taste and smell are two important chemical senses in animals and humans. Taste bud cells in the oral cavity and olfactory sensory neurons in the nasal cavity can regenerate over an individual's lifetime. Further, taste/olfactory receptors and their downstream signaling proteins are found in other tissues as well. Our ongoing projects focus on: 1) comparatively studying stem cell proliferation and differentiation in taste buds versus the olfactory epithelium; and 2) elucidating the function of taste/olfactory signal transduction proteins in the extra-oral /-nasal tissues of mice or human biopsies using single cell transcriptome analysis, optogenetics, organoid culture, functional imaging and other cutting-edge technologies.	being interested in life sciences plus some basic knowledge	1-2	<a href="http://mypage.zju.edu.cn/tastemell">http://mypage.zju.edu.cn/tastemell</a>
Laboratory of Biophotonics & Microscopy	Department of Biomedical Engineering, College of Biomedical Engineering & Instrument Science	Yingke Xu	yingkexu@zju.edu.cn	+86 571 87951091	Biophysics; Optogenetics; Membrane Biology; Image Processing	The lab is currently focusing on the following research topics: 1) Biomedical Imaging and Quantitative Image Analysis; 2) Combination of optogenetics and microscopy to control and imaging cellular molecular dynamics; 3) Mechanism of spatiotemporal regulation of vesicle trafficking in living cells and how that is perturbed in diseases (e.g. diabetes, cancer, etc.);	1) Strong interests in doing research; 2) Like multidisciplinary research project; 3) Provide CV and names of three references.	2	<a href="http://mypage.zju.edu.cn/en/yingkexu">http://mypage.zju.edu.cn/en/yingkexu</a>
Livestock & Poultry Engineering Center	College of Biosystems engineering and Food Science	WANG Kaiying	zjuwky@zju.edu.cn	+86 571 88982490	Agricultural wastes utilization; Agricultural air quality monitoring and control; Abatement system design of air pollution; Agricultural buildings and environmental monitoring.	The overall goal of this project is to evaluate the sustainability of livestock-crop system. The study will quantify the nutrient (N and P) balance and optimize the management of swine manure. He/she will practice the GIS data and field studies to model the impact of different management practices on manure utilization.	Applicants should be enrolled in a PhD program in Agricultural engineering; should be less than 30 years old; should possess a strong background in livestock, crop management and modeling; should be fluency in English and Chinese.	1	<a href="http://www.caefs.zju.edu.cn/english/">http://www.caefs.zju.edu.cn/english/</a>
AgroOptics and Imaging Lab	College of Biosystems engineering and Food Science	CEN Haiyan	hycen@zju.edu.cn	+86 571 88982527	plant phenotyping, UAV remote sensing in agriculture, spectroscopy and imaging	plant phenotyping based on hyperspectral imaging or chlorophyll fluorescence imaging	background in optical engineering, computer science, electrical engineering, agricultural engineering, statistics, and other relevant areas; experience in image analysis, and optical techniques is a plus	2	<a href="http://person.zju.edu.cn/en/chy">http://person.zju.edu.cn/en/chy</a>
	Department of Mathematics	Lin, Zhi	linzhi80@zju.edu.cn	+86 18042306389	Applied PDE, Fluid Mechanics, Stochastic Modeling	Mixing and Transport in Geophysical and Biological Fluids	Prerequisite Courses: PDE, Numerical Methods, Physics	1	<a href="http://www.math.zju.edu.cn:8080/linzhi/">http://www.math.zju.edu.cn:8080/linzhi/</a>
	School of International Studies	Ma Xiaoli	m Xiaoli@zju.edu.cn	+86 13989818169	British and American Literature	focusing on the tea text in British and American Literature	English or Comparative Literature major students	good spoken and written communication skills	
	Institute for Interdisciplinary Studies of World Literature and Department of English, School of International Studies	Nie Zhenzhao	niezhenzhao@163.com	+86 18986221829	literary theory, ethical literary criticism, text studies, comparative literature, cognitive studies	According to ethical literary criticism, every type of literature has its text. The original definition of oral literature refers to the literature disseminated orally. Before the dissemination, the text of oral literature is stored in human brain, which is termed as "brain text." Brain text is the textual form used before writing symbols are created and applied to recording information, and it still sustains after the birth of writing symbols. The similar type of text is written text and electronic one. Brain text consists of brain concepts, which, by the different sources, can be divided into objective concepts and abstractive concepts. Brain concepts are tools for thinking while thought comes from thinking by understanding and application of brain concepts. Brain text is the carrier of thought. The termination of the synthesis of brain concepts signifies the completion of thinking, which produces thoughts to form brain text. Brain text determines thought and behavioral patterns that include not only the way of communication or spreading information, but also man's mentalities, thinking, judgments, choices, actions and emotions. Brain text is also a deciding factor of man's lifestyle and moral behaviors. The nature of person's brain text determines his thinking and action, and utterly determines who he is.			1. <a href="https://sisu.ut.ee/iaelc2016/avaleht">https://sisu.ut.ee/iaelc2016/avaleht</a> ; 2. <a href="https://ghazouanearlane.wixsite.com/7thciaelc">https://ghazouanearlane.wixsite.com/7thciaelc</a> ; 3. <a href="http://iaelc2018.com/aboutus.html">http://iaelc2018.com/aboutus.html</a>
Laser and optics lab	Department of Physics	Li-Gang Wang	sxwlg@yahoo.com	+86 13858199471	Laser physics, Optical tweezer, singular optics, coherence optics	Project 1: New singular optics. Singular optics is very interesting as it carries orbital-angular momentum of light. Such beams will have new freedoms to manipulate the micro-particles and carries information. The goal of this project is to know the development of singular optics and to present the new model to describe various light fields with phase or polarization singularities, and try to experimentally demonstrate such theoretical beams, maybe to explore the optical spin Hall effect, Goos-Hanch effect, and propagating effect, etc.. Project 2: Mimic black hole in electronic circuits. Establish the mathematical analog between electronic system and black hole first, and then develop the method to measure the corresponding physical phenomena in the analogue electronic system.	1. Junior three or above; 2. interested in physics;	1-2	<a href="http://person.zju.edu.cn/en/wangligang">http://person.zju.edu.cn/en/wangligang</a>
Biophysics	Department of Physics	Jingyuan Li	jingyuanli@zju.edu.cn	+86 17706437771	Computational Biophysics, Molecular Dynamics Simulation	To study the mechanical properties of biological molecules, e.g. RNA, protein, using molecular dynamics simulations	experience on molecular modeling or molecular dynamics simulation	5	<a href="http://person.zju.edu.cn/jingyuan">http://person.zju.edu.cn/jingyuan</a>
Institute of Modern Physics	Department of Physics	Lih-King Lim	lihking@zju.edu.cn	+86 18358109291	Cold atoms and condensed matter theory	Entanglement entropy in interacting cold atoms	Bachelor, Master or PhD	2	<a href="http://physics.zju.edu.cn/chinese/redirect.php?catalog_id=4109&amp;object_id=135175">http://physics.zju.edu.cn/chinese/redirect.php?catalog_id=4109&amp;object_id=135175</a>
Zhejiang Institute of Modern Physics	Department of Physics	Gentarō Watanabe	gentaro@zju.edu.cn	+86 18768489355	theory of cold atomic gases, statistical mechanics, theory of open quantum systems	1. Performance of quantum thermal machines 2. Nonlinear phenomena in Bose-Einstein condensates in optical lattices	Bachelor, Master, or PhD	1	<a href="http://person.zju.edu.cn/en/gentarō">http://person.zju.edu.cn/en/gentarō</a>
Institute of Optics	Department of Physics	Jun Jing	jingjun@zju.edu.cn	+86 13585643140	quantum noise and quantum control	fundamental problems in quantum optics and quantum control	Quantum mechanics, Linear algebra, Calculus	1	<a href="http://person.zju.edu.cn/en/junjing">http://person.zju.edu.cn/en/junjing</a>

Laboratory Name	College/School/Department	Professor	E-mail Address	Telephone No.	Research Area	Project Discription	Admission Requirements	Capacity	Weblink
Millimeter-Wave and Radar Lab Information Processing and Communications Group	College of Information Science and Electronics Engineering	Zhiguo Shi	shizg@zju.edu.cn	+86 18857157592	Array signal processing, anti-drone system technic and system	Sparse arrays process the signals beyond the Nyquist rate, where the trade-off between the performance and the complexity is well balanced. This project aims to explore the potential superiorities of the popular sparse array configurations (such as co-prime arrays and nested arrays) for direction-of-arrival estimation and beamforming. Developing solid theories and novel algorithms based on the practical requirements. Also, the field experiments will be conducted on an anti-drone system called ADS-ZJU deployed in Zhejiang University, where a comprehensive understanding of the advantages and challenges for practical sparse array signal processing will be made.	1. Good Background in Mathematics or Electrical Engineering 2. Familiar with Matlab Programming 3. Good English Listening, Speaking and Writing Skills 4. Good Cooperation Ability	1	<a href="http://person.zju.edu.cn/s/hizg">http://person.zju.edu.cn/s/hizg</a>
State Key Lab of Silicon Materials/Micro-and nano-electronics	College of Information Science & Electronic Engineering	Mingsheng Xu	msxu@zju.edu.cn	+86 18857166743	two-dimensional materials and semiconductor devices	We have interest in using chemical and physical engineering approaches towards synthesis and fabrication of 2-dimensional (2D) layered materials with novel electronic and magnetic properties, and fabricating devices using the 2D materials.	Master or PhD student	1	<a href="http://person.zju.edu.cn/en/graphene/0.html">http://person.zju.edu.cn/en/graphene/0.html</a>
Key Laboratory of Advanced Micro/Nano Electronic Devices & Smart Systems and Applications	College of Information Science and Electronic Engineering/Zhejiang University	Ran Hao	rhao@zju.edu.cn	+86 18668232150	1. Photoelectric Modulator and Detector 2. Optical communications 3. The surface plasmonics on two-dimensional materials 4. Analysis and Design of Nano-optical Devices	Research on theory and experiment of silicon-based optical devices based on two-dimensional materials	1. Great enthusiasm for relevant research areas 2. Bachelor and above	1	<a href="http://person.zju.edu.cn/en/ranhao/0.html">http://person.zju.edu.cn/en/ranhao/0.html</a>
SafeLab(Secure Architecutre and Frontier Eletronics Laboratory)	College of Information Science & Eletronic Engineering, Insistitue of Cyber Security	Fan Zhang	fanzhang@zju.edu.cn	+86 13777356409	cyber-security	This project is going to explore the latest passive side channel attacks (power, EM, time, etc) and active side channel attacks (fault) on new platforms such as Intel SGX, Cloud etc	Knowledge of embedded system, hardware security, cipher implementation, system security or side channel attacks and countermeasures. Good programming skills.	2	<a href="http://www.iisee.zju.edu.cn/fanzhang/">http://www.iisee.zju.edu.cn/fanzhang/</a>
Lab of Visual Image Processing and Artificial Intelligence	College of Information Science and Electronic Engineering	Haoji Hu	haoji_hu@zju.edu.cn	+86 571 87951697	Computer Vision, Image Processing, Machine Learning	Recent years have seen great advance of Artificial Intelligence and Computer Vision powered by Deep Neural Networks (DNNs). However, modern DNNs tend to be cumbersome in terms of both storage and computation, which hinders their deployment on resource-limited systems, like cellphones, IoT devices. Many works seek to eliminate the redundancy in DNNs from four top-down levels, i.e. network architecture, layer, parameter and bit representation. Pruning is an effective method to remove redundancy in the parameter level, in which structured pruning mainly aims to achieve acceleration of DNNs. Despite the improvement of efficiency reported by many related DNN acceleration and compression methods, a light enough and powerful enough DNN model for mobile systems is still inaccessible. The difficulty stems partly from the lack of theory with regard to the definition and measure of neural network redundancy, and partly from the imbalance between theoretical analysis and practical hardware implementation. In this project, we try to propose structured pruning methods based on regularization, and try to theoretically validate the proposed method. The application area of this project includes DNN-related areas such as face recognition, medical imaging, object detection and recognition, etc.	The applicant should be a second or third year undergraduate. The prerequisites include calculus, linear algebra, algorithm and statistics. It is better that the applicant knows something on deep learning.	1	<a href="http://www.zjuvipai.com">www.zjuvipai.com</a>
Laboratory of Immune Regulation	School of Medicine	LU Linrong	lu.linrong@gmail.com; zhangqi_iris@zju.edu.cn	+86 571 88981173	Immune Regulation	The main focus of our lab is to elucidate the molecular pathways and cellular interactions that mediate and regulate thymocyte development and T cell-mediated immune responses by using molecular biology and genetic approaches. We are especially interested in the identification and characterization of novel immune-related molecules, and the development and treatment of cancer and autoimmune diseases.	We welcome candidates with background in immunology or cell biology. Intersted applicant need to submit a brief statement of research interest ,curriculum vitae, and list of referances by email to lu.linrong@gmail.com.	1-2	<a href="http://person.zju.edu.cn/llr/572898.html">http://person.zju.edu.cn/llr/572898.html</a>
Pengxu Qian	School of Medicine	Pengxu Qian	axu@zju.edu.cn	+86 16605810808	Epigenetic regulation in hematopoietic stem cells	To treat leukemia by altering the DNA methylation levels of specific differentially methylated regions (DMRs) using epigenome editing technology	To apply, candidates should send CV, letters of recommendation and a brief statement of research interests	2	<a href="http://person.zju.edu.cn/en/pengxuqian/0.html">http://person.zju.edu.cn/en/pengxuqian/0.html</a>
Microbial Pharmaceuticals	School of Medicine	Xu-Ming Mao	xmmao@zju.edu.cn	+86 571 88981335	Microbial Pharmaceuticals	genome mining of bioactive natural products from fungi, illustration of their biosynthetic pathway and evaluation of their bioactivity	Ph.D candidate in Microbiology, Biochemistry or Chemistry	1	<a href="http://person.zju.edu.cn/maoxm">http://person.zju.edu.cn/maoxm</a>
Brain Aging and Myelin Repair	School of Medicine	Jing-Wei Zhao	jingweizhao@zju.edu.cn	+86 15858104516	Neuroscience	Identifying molecules that increase with brain aging	Neuroscience or aging knowledge background	1	<a href="http://person.zju.edu.cn/jwzhaotzjuion">http://person.zju.edu.cn/jwzhaotzjuion</a>
Zhang Jin Lab	School of Medicine	Zhang Jin	zhgene@163.com	+86 15258886483	Molecular mechanism of pluripotent maintenance of stem cells; The effect of gene regulation network and metabolic network on cell fate; Establishment of iPS disease model; Mechanism and clinical transformation of stem cell differentiation immune cells	Mechanisms of organelles and metabolic remodeling in the regulation of pluripotent stem cell fate	English native speaker, teamwork, biology or medical related major	1	<a href="http://www.cmm.zju.edu.cn/index.php?a=scholar&amp;catid=4&amp;uid=979">http://www.cmm.zju.edu.cn/index.php?a=scholar&amp;catid=4&amp;uid=979</a>
Naren Lab	School of medicine and public health, Department of Toxicology	Naranmandura	narenman@zju.edu.cn	+86 13634106038	Toxicology and Pharmacology	Toxicological study of arsenicals, their pharmacological potential ; Aptamers development and its comprehensive studies ; Development of some novel strategies for the treatment of variant APL.	there is no special admission requirements	1	<a href="http://person.zju.edu.cn/en/narenman">http://person.zju.edu.cn/en/narenman</a>
Translational Medicie of Materials	Institute of Translational Medicine, School of Medicine	Ben Wang	benwang@zju.edu.cn	+86 15868878859	Biomaterials and Biointerfaces	The Wang laboratory uses an interdisciplinary approach that integrates material science, biology, chemistry and engineering to solve problems in human health. It is emphasized that using Nature's design principles to develop bio-inspired materials and devices, and ultimately, transform medicine. From the physicochemical perspective, they are focused on understanding the molecular mechanisms involved in the interfaces of cell-cell, cell-materials, and develop the tools for cancer diagnostics and cell-based therapeutics. They are also fully committed to the professional development of individuals in the group and do everything they can to ensure successful career paths.	Major in Chemistry, Biology, Medicine and ralated engineering	3	<a href="http://wanglab.zju.edu.cn/Default.aspx">http://wanglab.zju.edu.cn/Default.aspx</a>
Dr.Weizou's Group	Institute of Translational Medicine and the Fourth Affiliated Hospital,Zhejiang University School of Medicine	Wei Zou	zouwei@zju.edu.cn	+86 18042030139	Neurodevelopment and neurodegeneration	The main research interest of our lab is to identify novel molecular and cellular mechanisms underlying neurodevelopment and neurodegeneration.We are particularly interested in understanding how neurons develop elaborate dendritic arbors during development, and how these structures are properly maintained in aged animals.We hope that our research will help to cure human diseases, including Alzheimer's disease and Parkinson's disease.	1. Candidates should have enough background in biology or medical sciences.2. Candidates should be able to communicate in English or Chinese.	1	<a href="http://person.zju.edu.cn/en/weizou">http://person.zju.edu.cn/en/weizou</a>
Laboratory of Systems of Developmental Biology	School of Medicine, Institute of Genetics	Jun Ma	jun_ma@zju.edu.cn	+86 571 88208393	Systems Developmental Biology	cellular decisions in development and disease	background in biology, physics or mathematics	1	
Laboratory of Systems of Developmental Biology	School of Medicine, Institute of Genetics	Feng He	feng_he@zju.edu.cn	+86 571 88206405	Quantitative Biology and Modeling	quantitative and modeling studies in various biological systems	background in biology, physics or computer sciences	1	

Laboratory Name	College/School/Department	Professor	E-mail Address	Telephone No.	Research Area	Project Discription	Admission Requirements	Capacity	Weblink
Laboratory for Mitochondrial Biomedicine	Institute of Genetics, Zhejiang University School of Medicine	Associate Prof. Wang Meng	mengwang@zju.edu.cn	+86 571 88982377	Mitochondrial genetics and maternal inherited diseases including hearing loss, visual loss and hypertension, tRNA metabolism, mitochondrial biogenesis	Several mitochondrial tRNA mutations have been associated with maternally inherited diseases. My research is focused on elucidating the mechanism of the functional diversity of human mitochondrial aminoacyl-tRNA synthetases (aaRS) and cognate mitochondrial tRNAs, especially on the tRNA modifications in maternally inherited diseases, such as deafness, diabetes and hypertension. A cross-disciplinary approach combining biochemical, biophysical, molecular genetics, cell biology and evolutionary analysis is used in my research. Our findings may provide new insights into the pathophysiology of maternally diseases, that was manifested by altered nucleotide modifications of mitochondrial tRNAs.	A successful candidate is highly motivated, has scientific curiosity and excellent communication skills in the English language. Research experience in RNA and/or protein structure and biochemistry is preferred, and human cell culture experience is a plus.	1	<a href="http://person.zju.edu.cn/mengwang">http://person.zju.edu.cn/mengwang</a>
Laboratory for Mitochondrial Biomedicine	Institute of Genetics, Zhejiang University School of Medicine	Prof. Guan Min-Xin	gminxin88@zju.edu.cn	+86 571 88982356	Mitochondrial genetics and maternal inherited diseases including hearing loss, visual loss and hypertension, tRNA metabolism, mitochondrial biogenesis	Several mitochondrial tRNA mutations have been associated with maternally inherited diseases. My research is focused on elucidating the mechanism of the functional diversity of human mitochondrial aminoacyl-tRNA synthetases (aaRS) and cognate mitochondrial tRNAs, especially on the tRNA modifications in maternally inherited diseases, such as deafness, diabetes and hypertension. A cross-disciplinary approach combining biochemical, biophysical, molecular genetics, cell biology and evolutionary analysis is used in my research. Our findings may provide new insights into the pathophysiology of maternally diseases, that was manifested by altered nucleotide modifications of mitochondrial tRNAs.	A successful candidate is highly motivated, has scientific curiosity and excellent communication skills in the English language. Research experience in RNA and/or protein structure and biochemistry is preferred, and human cell culture experience is a plus.	1	<a href="http://person.zju.edu.cn/guanmx">http://person.zju.edu.cn/guanmx</a>
National key laboratory for the diagnosis and treatment of infectious diseases	School of Medicine/Department of Anesthesiology and Crit Care	Xiangming Fang	xiangming_fang@163.com	+86 13857161019	The pathophysiology and treatment of sepsis, and the protection of peri-operative organ dysfunction (focus on lung & immune system).	1. To investigate the beneficial effect of TREM-2 that attributed to enhanced bacterial clearance in sepsis, as well as the underlying mechanism of TREM-2 in the development of sepsis in visceral obesity mice. 2. To explore the antibacterial and anti-inflammation function of $\alpha$ human-defensin-5-myr as a novel multifunctional nanobiotics in sepsis. 3. To elucidate the role of basal forebrain cholinergic neurons in polymicrobial sepsis-induced inflammation and further to illuminate the neuro-immune interaction in regulating sepsis.	1. Be eager to participate in scientific research and have innovative spirit. 2. Be good at communication and cooperation. 3. Have a solid theoretical knowledge in biomedical area. 4. Have experimental experience on immunology and molecular biology and have achieved basic experiment skills. 5. Provide a study plan for the two-month international communication before admission.	1	<a href="https://baike.baidu.com/item/%E6%96%B9%E5%90%91%E6%98%8E/6595770?fr=aladdin">https://baike.baidu.com/item/%E6%96%B9%E5%90%91%E6%98%8E/6595770?fr=aladdin</a>
Institute of Cardiovascular disease, Zhejiang University	School of Medicine	LI ZHANG	li_zhang@zju.edu.cn	+86 15925689811	Vascular biology and diseases	Professor Zhang's lab is based on the department of Cardiology of Zhejiang University to carry out clinical and basic scientific research. Main interests: 1. Molecular mechanisms controlling vascular endothelial (EC) and smooth muscle cell (SMC) differentiation from stem/progenitor cells. 2. Identify and explore the potential new therapeutic targets for intervention in atherosclerosis and angioplasty restenosis by using various animal models of cardiovascular diseases, such as vessel injury and atherosclerosis. 3. Functional involvements of non-coding RNAs in stem cell fate decision and vascular diseases.	Students with interest in research work and vascular pathophysiology	2	<a href="http://person.zju.edu.cn/zhangli">http://person.zju.edu.cn/zhangli</a>
NHC Key Laboratory of Combined Multi-organ Transplantation	Zhejiang University School of Medicine	Xu Xiao	zjxu@zju.edu.cn	+86 13588191177	①molecular subtyping of hepatocellular carcinoma undergoing liver transplantation; ②novel biomarkers identification for hepatocellular carcinoma based on proteomics; ③precision-medicine-oriented innovative nanoparticle-drug delivery system based on patient-derived xenograft (PDX) model for HCC	①patient-derived xenograft (PDX) model establishment; ②precise treatment for hepatocellular carcinoma; ③transplantation immunity	①have open personality and team spirit; ②be skilful in experimental technique of molecular biology and have laboratory experience; ③article publication is preferred	1	<a href="http://www.cmm.zju.edu.cn/index.php?a=scholar&amp;web=english&amp;uid=459">http://www.cmm.zju.edu.cn/index.php?a=scholar&amp;web=english&amp;uid=459</a>
FU Junfen's lab	The Children's Hospital Zhejiang University School of Medicine	FU Junfen	ffj68@qq.com	+86 13777457849	Pediatric endocrinology, especially on childhood obesity and diabetes, adolescent medicine and genetic metabolic diseases	funded by the national key research and development programme of CHINA(2016YFC1305301)	Biomedicine, biology and medicine realated speciality. Open for undergraduate, graduate, doctoral students	3-5	
Women's Reproductive Health Laboratory of Zhejiang Province	Women's Hospital School of Medicine Zhejiang University	Zhang Dan	zhangdan@zju.edu.cn	+86 13735808888	Reproductive medicine	Ovarian dysfunction is one of the major reasons resulting in female infertility. The aim of this project is to investigate the molecular mechanisms involved in ovarian function regulation, and the pathogenesis of ovarian dysfunction associated diseases such as premature ovarian insufficiency. The results of this research project would contribute to providing new insights into ovarian function regulation and early diagnosis, intervention and future treatment of ovarian dysfunction.	Excellent command of English or Chinese, Over two years full time postgraduate student(Academic Master's Degree)	1	<a href="http://www.zjszjk.cn/show.asp#">http://www.zjszjk.cn/show.asp#</a>
School of prenatal care, Division of maternal care information	Department of Women's Health, Women's Hospital School of Medicine Zhejiang University	Liqian Qiu	qiulq@zju.edu.cn	+86 13575738069	Prenatal care Education, Maternal Care data collection	student could participate prenatal care health education and also help the supervisor to do MCH data process.	Students are interested in MCH work link health education, data processing working, understanding little Chinese. She/He has some computer data processing knowledge.physical health, no infection disease. master degree or above.	1	Women's hospital web address
Lab of Structural Pharmacology	College of Pharmaceutical Sciences	Haitao Zhang	haitaozhang@zju.edu.cn	+86 15000752984	Structure and Function of G Protein-Coupled Receptors (GPCRs) for Drug Discovery	Protein Expression, Purification, Characterization, and Crystallization of a GPCR with its ligand.	Biochemistry, Molecular Biology	1	<a href="http://person.zju.edu.cn/e/haitaozhang">http://person.zju.edu.cn/e/haitaozhang</a>
Institute of Pharmaceutical Informatics	College of Pharmaceutical Sciences	FAN Xiaohui	fanxh@zju.edu.cn	+86 571 88208596	quality control of traditional Chinese medicines	Traditional Chinese medicines (TCM) usually consist of complex mixture of phytochemical constituents, which raises a challenge to their quality control. In our lab, we develop novel quality control strategies and methods to ensure the safety, efficacy and batch-to-batch consistency of TCM.	The candidate should be proficient in English speaking reading and writing.	1	<a href="http://www.cps.zju.edu.cn/index.php?c=index&amp;a=jzyg_detail&amp;id=39&amp;web=english">http://www.cps.zju.edu.cn/index.php?c=index&amp;a=jzyg_detail&amp;id=39&amp;web=english</a>
Pharmaceutical Engineering Lab	Institute of Pharmaceutics, College of Pharmaceutical Sciences	HU Fuqiang	hufq@zju.edu.cn	+86 13805736649	1. Molecular design and evaluation of nanocarriers materials. 2. Novel drug delivery system of molecular target. 3. Drug controlled release.	Construction of new nanoscale drug delivery system to collectively target tumours and their environment for effective breast cancer and lung metastasis therapy.	PhD candidate (first or second grade), literature research, experiment operation skills	1	<a href="http://www.cps.zju.edu.cn/index.php?c=index&amp;a=jzyg_detail&amp;id=160&amp;web=english">http://www.cps.zju.edu.cn/index.php?c=index&amp;a=jzyg_detail&amp;id=160&amp;web=english</a>
Pharmaceutical Engineering Lab	Institute of Pharmaceutics, College of Pharmaceutical Sciences	YUAN Hong	yuanhong70@zju.edu.cn	+86 13606804049	Biomaterials, Controlled and targeted drug delivery, Cancer therapy, nanotechnology, Advanced Formulation Design	Transport mechanisms of lipid nanoparticles across intestinal epithelial cell monolayer	PhD candidate (first or second grade), literature research, experiment operation skills	1	<a href="http://www.cps.zju.edu.cn/index.php?c=index&amp;a=jzyg_detail&amp;id=31&amp;web=english">http://www.cps.zju.edu.cn/index.php?c=index&amp;a=jzyg_detail&amp;id=31&amp;web=english</a>
Biomaterials and Nanomedicine Laboratory	College of Pharmaceutical Sciences	Yuan Ping	pingy@zju.edu.cn	+86 18757596732	Drug Delivery, Protein Delivery, Genome Editing	The projects available in our lab focus on the development of functional biomaterials for the delivery of genome editing tools.	The candidate should have the background in pharmacy, chemistry, biology or polymer materials.	1	
Institute of Pharmacology and Toxicology	College of Pharmaceutical Sciences	Hong Zhu	hongzhu@zju.edu.cn	+86 571 88208401	Research Interest: development of innovative anti-cancer drugs and achieving molecular understanding of their action mechanisms.	Explore the potential regulator(s) on the Hippo-YAP pathways in cancer cells.	Have the ability to handle basic cellular experimental skills including cell culture, Western blot or qRT-PCR.	1	<a href="http://www.cps.zju.edu.cn/index.php?c=index&amp;a=jzyg_detail&amp;id=55&amp;web=english">http://www.cps.zju.edu.cn/index.php?c=index&amp;a=jzyg_detail&amp;id=55&amp;web=english</a>

Laboratory Name	College/School/Department	Professor	E-mail Address	Telephone No.	Research Area	Project Discription	Admission Requirements	Capacity	Weblink
Institute of Intelligent Transportation Systems	College of Civil Engineering and Architecture	CHEN Xiqun	chenxiqun@zju.edu.cn	+86571-88208938	Traffic and Transportation Management , Transportation Big Data Analytics, Traffic Flow Modeling and Simulation, Simulation-Based Optimization, Transportation System Analysis	<p>This project focuses on the ridesourcing system optimization modeling and behavioral analysis of the shared mobility on demand. The on-demand ride service platform, e.g., Urber, Lyft, DiDi Chuxing, is an emerging technology with the boom of the mobile internet. Ridesourcing or transportation network companies (TNCs) refer to an emerging urban mobility service mode that private car owners drive their own vehicles to provide for-hire rides. The platform serves as a coordinator who matches requesting orders from passengers (demand) and vacant registered cars (supply). There exists an abundance of leverages to influence drivers' and passengers' preference and behavior, and thus affect both the demand and supply, to maximize profits of the platform or achieve the maximum social welfare. The following research efforts are ongoing in Prof. Xiqun Chen's team: (1) On-demand ride services platform and government regulation policy optimization via coordinating supply and demand; (2) Urban road network-wide performance evaluation by exploring real-world emerging ridesourcing order data extracted from DiDi's platform; (3) Learn on-demand ridesplitting behavior; and (4) Demand/supply/traffic forecasting. Those research initiatives help decision makers better understand the emerging on-demand ride services.</p>	Good background or great interests in operations research/computer programming/big data analytics	4	<a href="http://person.zju.edu.cn/en/xiqun">http://person.zju.edu.cn/en/xiqun</a>