



An Overview of Xiamen University and School of Physics and Mechanical & Electrical Engineering Xiamen University

Chen-Xu Wu

廈門大學



Xiamen University on the World Map





Xiamen(Location)

A resort city at the west side of
Taiwan Strait

From

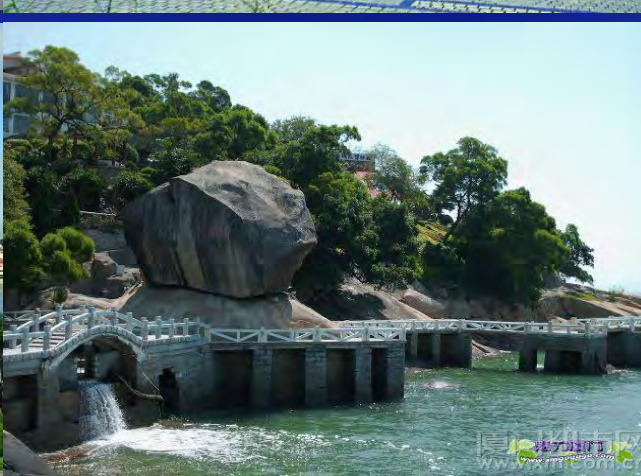
| | |
|-----------------|---------|
| Kaosiung Taiwan | 289 km |
| Kemoy Taiwan | 37 km |
| Hongkong | 850 km |
| Shanghai | 1300 km |



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图片来源: bbs.66163.com





Xiamen University



◆ **Founded in 1921 by Tan Kah Kee, a great overseas Chinese tycoon and philanthropist**

March 31, 1990, Planetoid No. 2963 was named after Tan Kah Kee

College of Chemistry, UCB, USA, named Tan Kah Kee Hall

◆ **One of the top universities in China**

Rated No. 6 institution in China by Nature China Report 2012.

◆ **Total enrollment of 40000 students**

Undergraduate 20454

Master Program 16546 PhD Program 2797

International Students

◆ **Working Staff >5100**

Faculty members 2536

◆ **Three campuses**



Three Campuses of XMU 厦大三校区



Main Campus (170 hectares)



Zhangzhou Campus (180 hectares)



Xiang'an Campus (240 hectares)

Total area: 590 hectares



A Top View of XMU Main Campus





Main Campus



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Xiamen University





Main Campus

Pen Tung Sah MEMS Center



Jiannan Complex

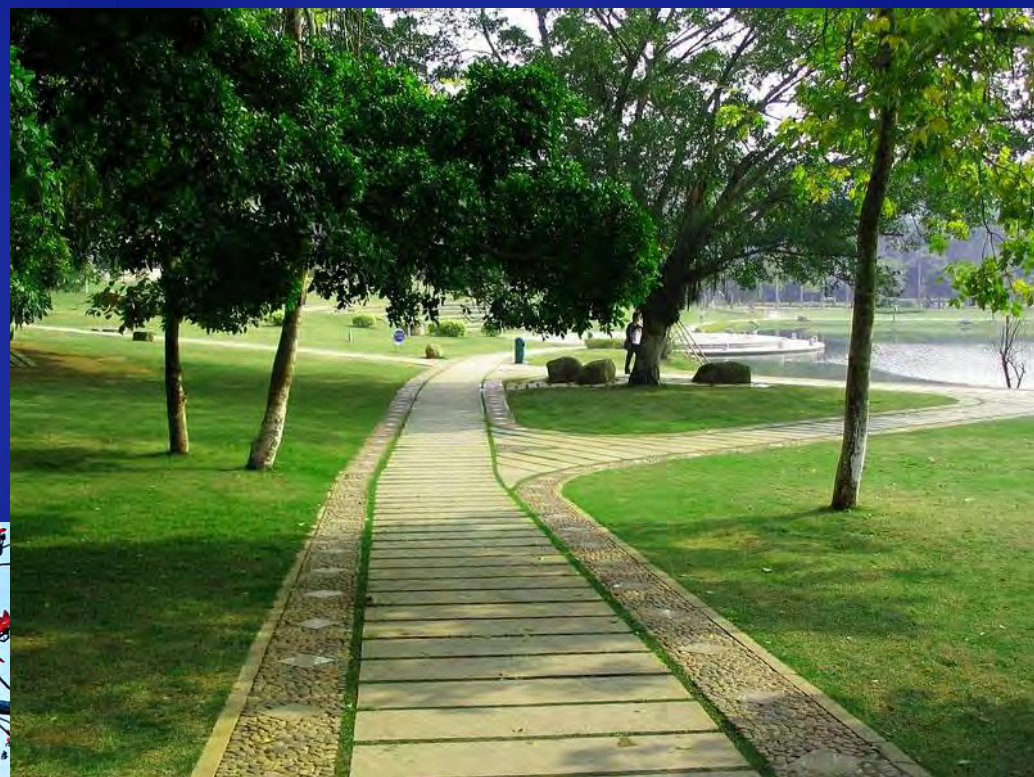


Baicheng Beach



Furong Lake and Jiageng Complex





Peaceful Campus

Cradle of XMU, Qunxian Buildings

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Zhangzhou Campus (180 hectares)



Library (Zhangzhou Campus)





Student Dormitory



Gymnasium



**Students'
Canteen**

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Statistics

Colleges and Schools: 26

School of Public Health

School of Physics and Electrical & Mechanical Engineering

Independent College: 1

15000 undergraduates

Departments: 66

Doctoral programs: 185

Master programs: 279

Undergraduate programs : 83





9 Major Disciplines

- Philosophy
- Economics
- Law
- Arts
- History
- Science
- Engineering
- Health Sciences
Management





Research Institutes

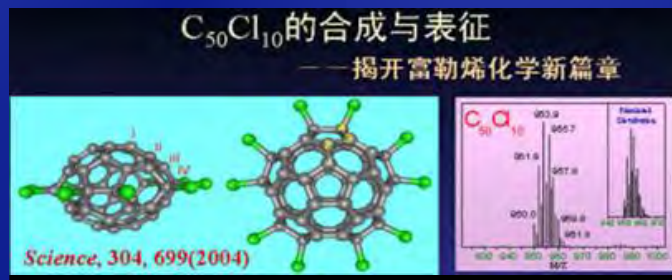


- Research institutes and centers: >150
- National Key labs and Engineering Research Centers: 4
- Education Ministry Key Research Bases in Humanities and Social Science: 5
- Education Ministry Key Labs:5
- Education Ministry Key Engineering Research Centers:3
- Ministry of Science and Technology's Center for Key International Technology Cooperation:1
- Provincial Key labs and Research Centers: 24
- Municipal Engineering Research Centers: 14

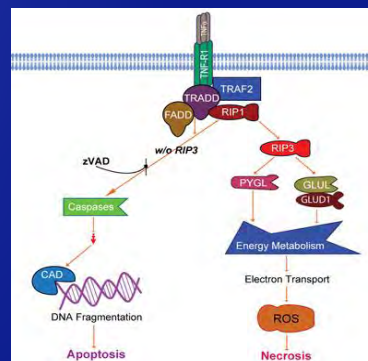


Research Achievements

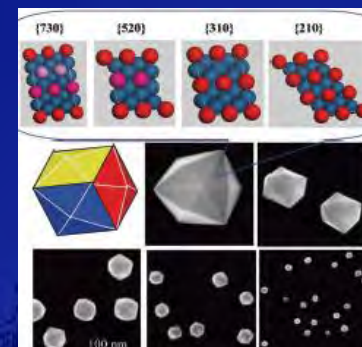
16 research reports were published in *Science* and *Nature*, and 3 scientific research findings won the Second Prize of National Award in Natural Science over the last 5 years.



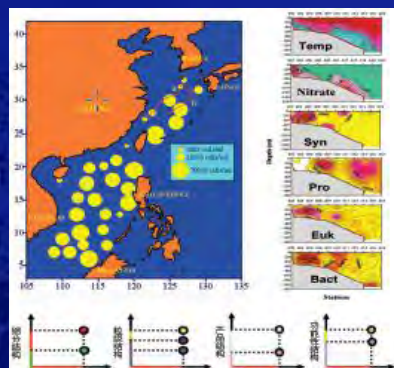
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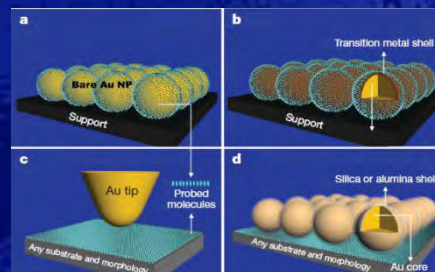
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School of Physics and Electrical & Mechanical Engineering

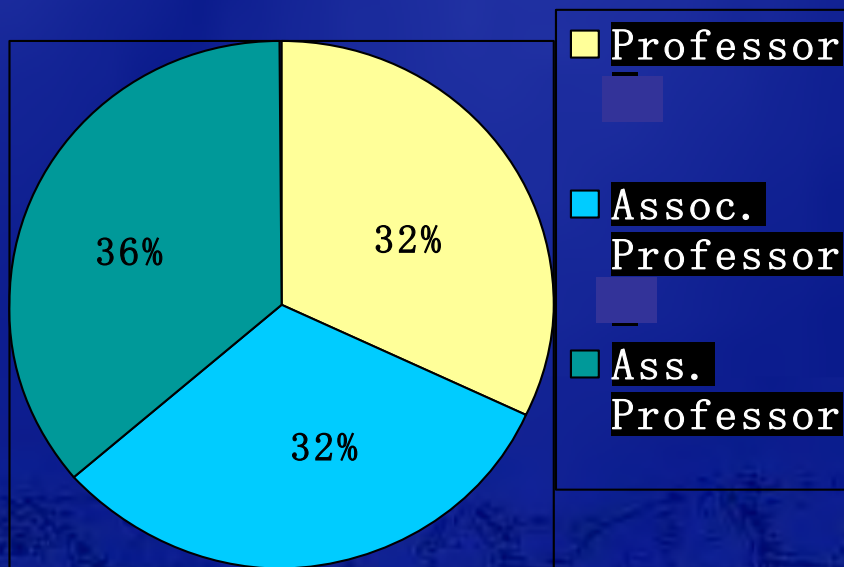
- Department of Physics 1923
- Department of Mechanical & Electrical Engineering 1940
- Department of Aeronautics 2007
- Department of Electronic Science 2011
- Department of Astronomy 2013
- Pen-Tung Sah Micro-Electromechanical System Research Center 1999

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Faculty Size

| | |
|------------------|--------------------------|
| Working staff | 254 |
| Faculty | 154 |
| Technicians | 80 |
| Office Staff | 20 |
| Total enrollment | 1680+424+93 (as of 2012) |



| | |
|-------------------------------------|----|
| Physics | 72 |
| Mechanical & Electrical Engineering | 42 |
| Aeronautics | 17 |
| Electronics | 23 |

One National Academy of Engineering member, USA, Prof. Chi-Tang Sah.

Two members of Academician, CAS (Adjunct)

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Program \(MFSP\)](#)[Member Sign In Form](#)[Celebrated Members](#)[Members Making News](#)[Home](#) :: [Membership](#) :: [Celebrated Members](#)

Celebrated Members

To honor and recognize esteemed EDS alumni, we are pleased to announce the EDS Celebrated Member Program.

When you're an EDS member, you're in good company. Our 10,000+ members include undergraduate students, academics, industry leaders, and recent Nobel Laureates such as George Smith and Herb Kroemer, our inaugural Celebrated Members.

Those of us in EDS can take pride in the accomplishments of these Celebrated Members and draw from them inspiration to advance our field and help transform the world around us.

For more information or to suggest
[office](#).

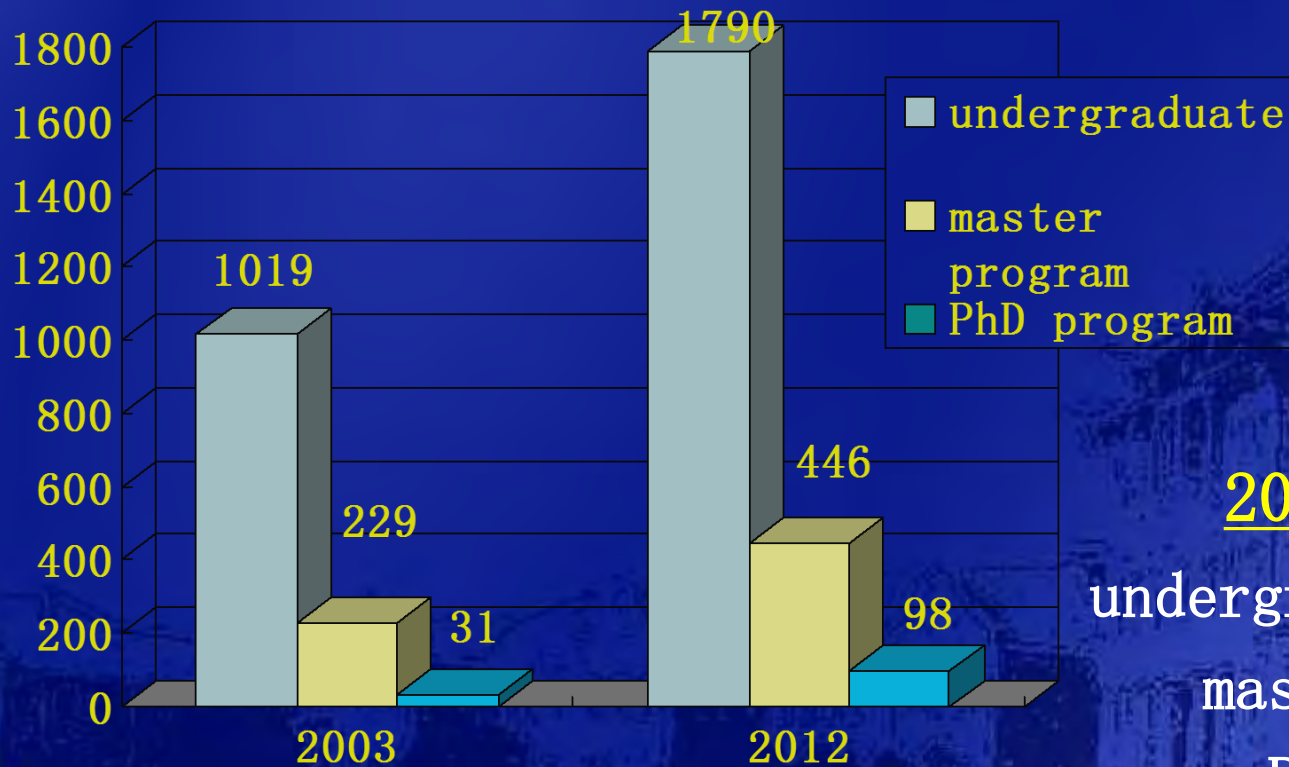
| Year | | | |
|------|--|---|-------------------------------|
| 2011 | |  | Herb Kroemer |
| 2012 | |  | Chih-Tang Sah |
| 2010 | |  | Leo Esaki |

Prof. Chi-Tang Sah was elected
as 2012 IEEE EDS celebrated
Member, together with Leo Esaki.



Size/Student enrollment

Total student enrollment:



2003 → 2012

undergraduate 75.7%

master 94.8%

PhD 216%

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Institute of Theoretical Physics and Astrophysics

The Institute of Theoretical Physics and Astrophysics (ITPA), founded in early 2006, is an integration of resources of the Department of Physics in theoretical research. Research at the Institute is divided into seven major directions:

- ◆ soft condensed matter physics
- ◆ modern thermodynamics
- ◆ statistical physics
- ◆ computational materials science
- ◆ dynamics of complex systems
- ◆ biophysical modeling
- ◆ theoretical astrophysics



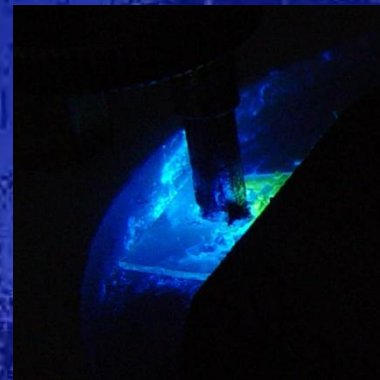
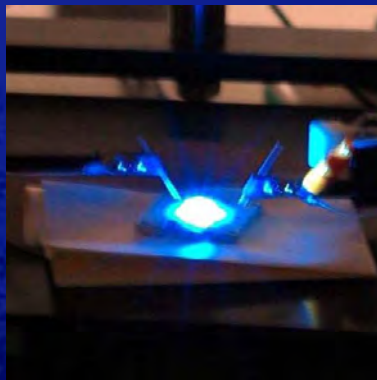
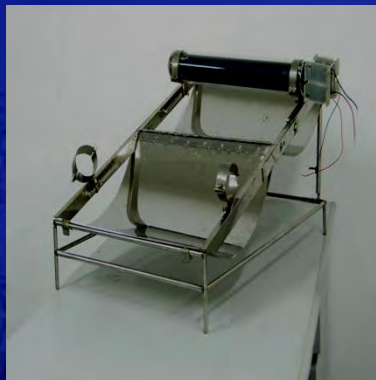
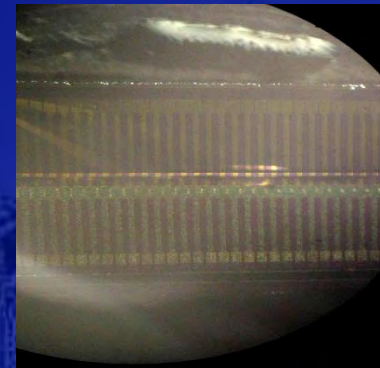
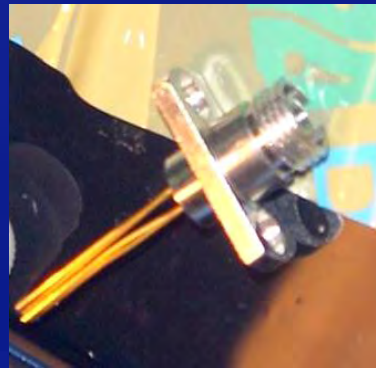
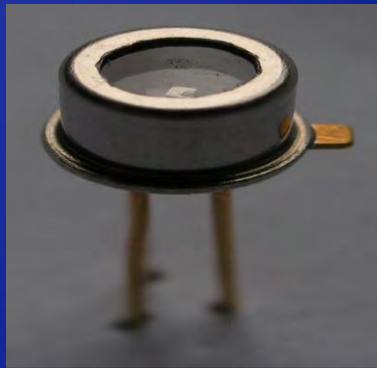
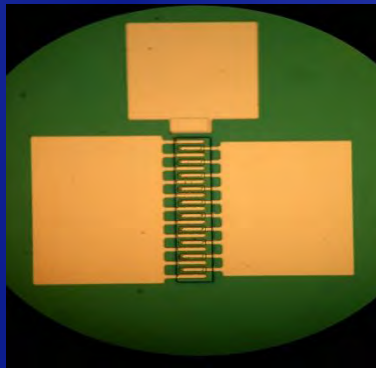
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Semiconductor Photonics Research Center

Si-based semiconductors, and other optoelectronic materials and devices
GaN- and ZnO-based semiconductors, low-dimensional nanostructures and materials
photonic crystals and integrated photonic chips, etc.

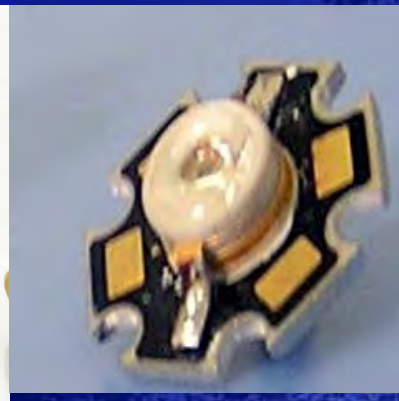
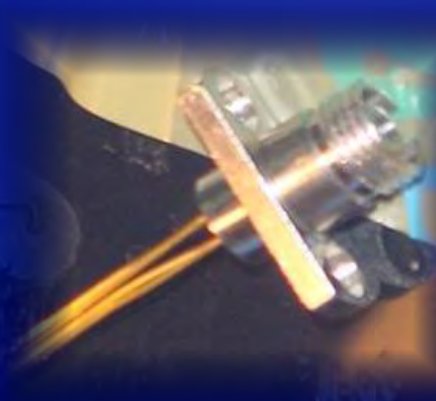
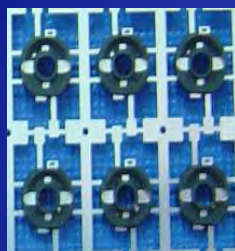
Technology developments mainly focus on blue-green lasers, microwave HBTs for 3G wireless telecommunications, S+C+L narrowband filters, deep-UV photodetectors, and ZnO- and GaN-based nonlinear semiconductor photonic devices.



121003



Semiconductor Photonics Research Center



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Fujian Semiconductor LED Engineering Research Center

LED testing method: chip, device, array, luminaire, and phosphor powder as well as their reliability.

LED testing instrumentation and standardization.

Test, certification and calibration of LED related light sources

Development of solar cell materials and related products.

Service for solid-state lighting industry.





Institute of Non-Silicon Micro/Nano System Manufacturing

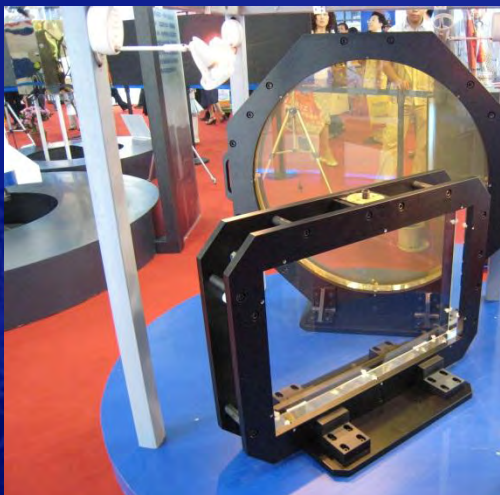
The Institute of Non-silicon Micro/nano System Manufacturing was established in 2007. The research in the Institute focuses on the polymer micro/nano devices and their manufacturing, including novel micro/nano electromechanical systems, core manufacturing technology of flexible electromechanical systems, and electro-spinning technology and its applications.

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Institute of Precision Engineering

The Institute of Precision Engineering was founded in 1992, affiliated with the Department of Mechanical & Electrical Engineering. Major research topics are in the following areas: virtual design and modern manufacturing, modern sensing and testing, mechanical control and numerical control, and micro electro-mechanical system and micro devices, etc





Plasma and NMR Lab



5mm WideLine Probe



Probe



Varian 7mm CP/MAS Solid

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Equipments

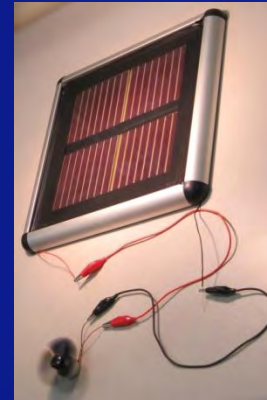
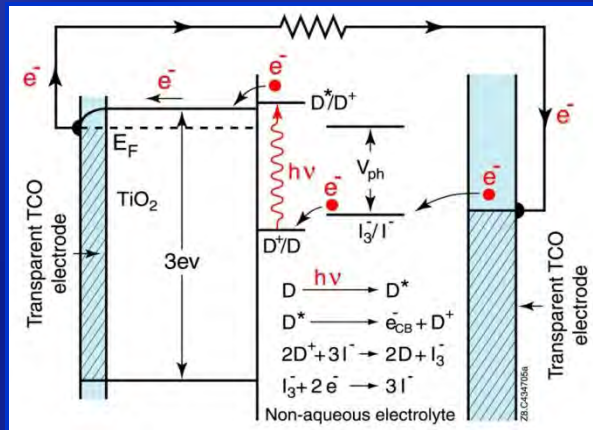
- ❑ Photolithography;
- ❑ Clean & Etching Procedures;
- ❑ Annealing
- ❑ Oxidation & Doping
- ❑ Metallization & Sputtering
- ❑ Chemical Vapor Deposition
- ❑ Nonstandard Process
- ❑ In-Line Characterization Tools
- ❑ Wire bonding and Packaging



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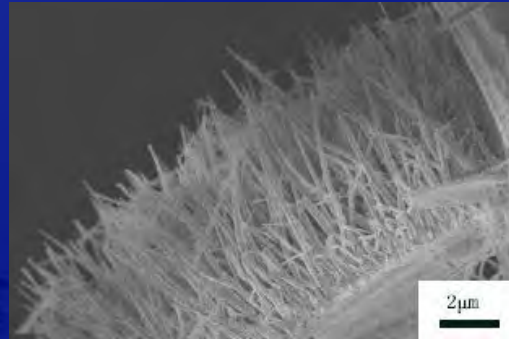
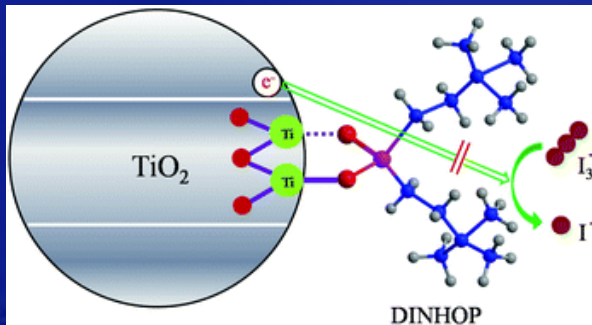


Flexible Solar Cell



dye sensitized cell solar cells

From Module to Solar Panel



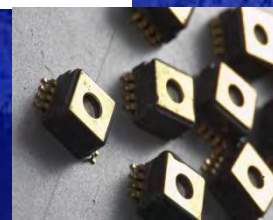
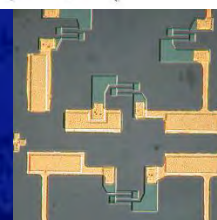
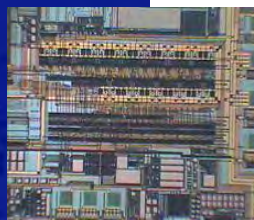
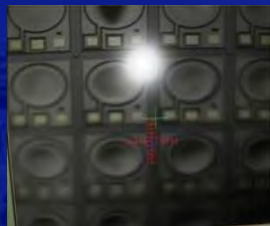
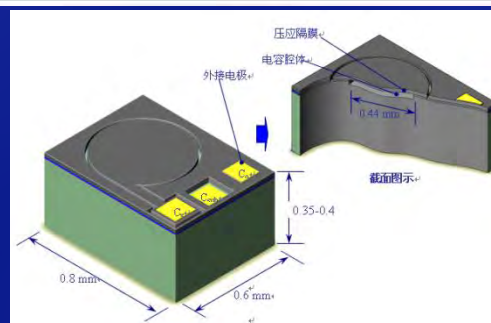
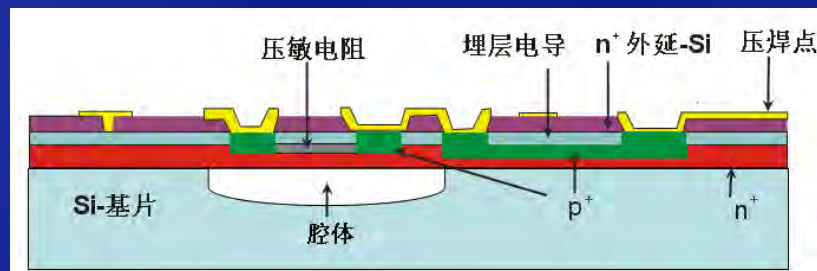
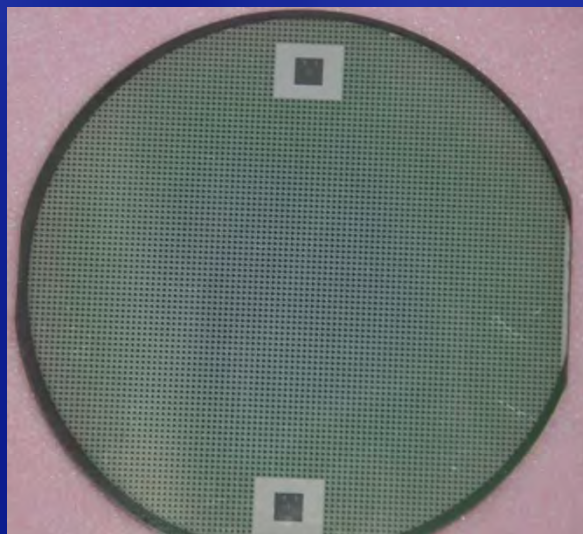
Research fields: 1. Interface engineering 2. nano-material 3. flexible cells

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Pressure Sensor

- ❑ Advanced SOI and Silicon Direct Bonding (SDB) Technology
- ❑ Enhanced Temperature Range, High Stability and Uniformity
- ❑ Application: Gas / Fluidic Monitoring

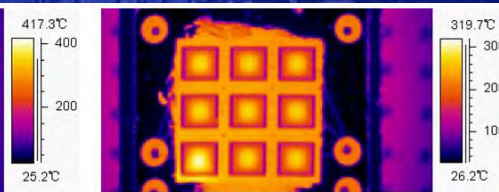
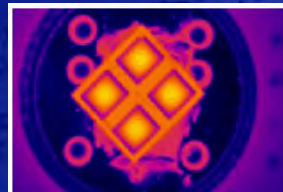
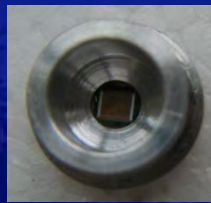
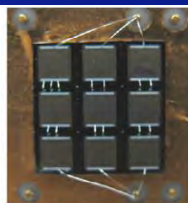
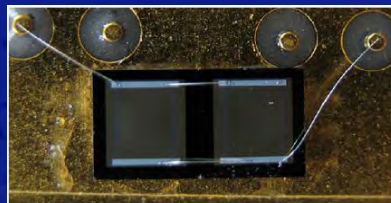
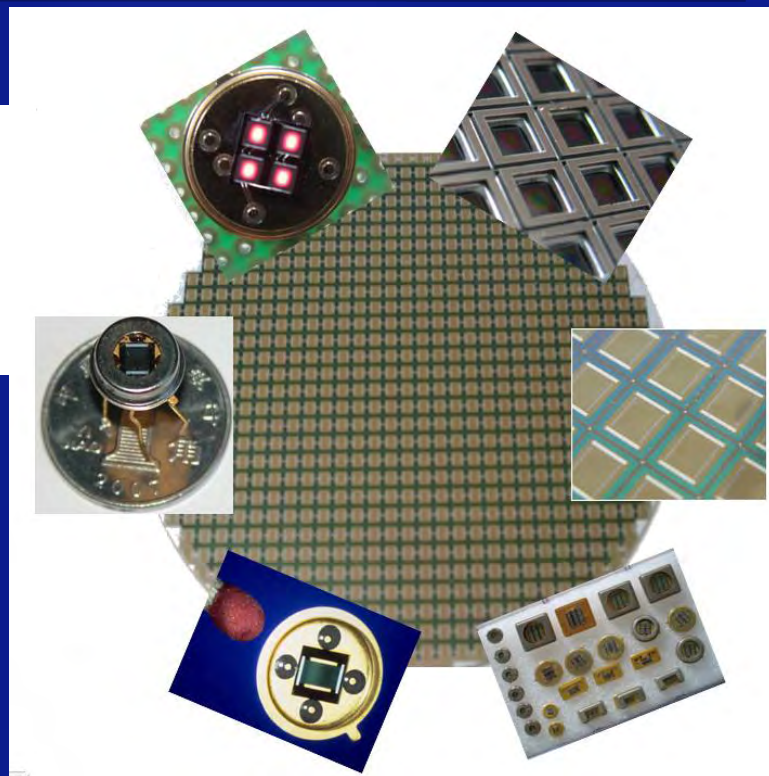
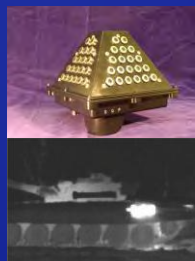


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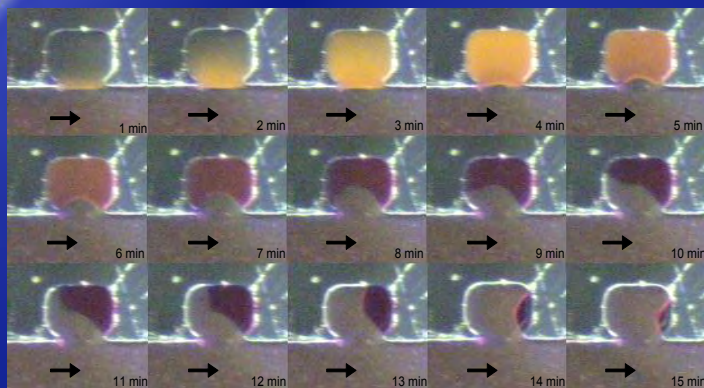
Micro Infrared Emitter

- ❑ Wavelength: 1.5 to 20 μm
- ❑ Modulation Frequency: up to 40 Hz
- ❑ Application: in site gas analyzer

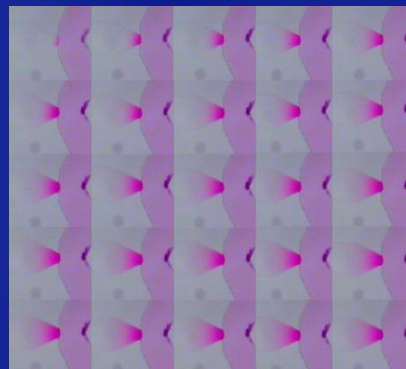




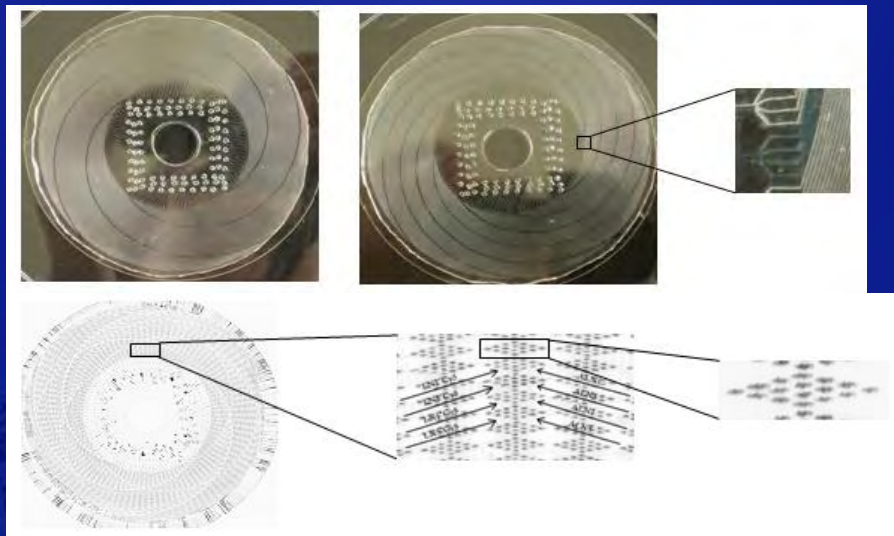
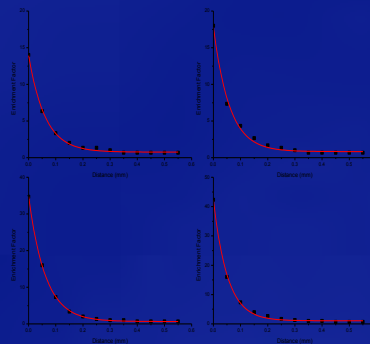
Microfluidic Pretreatment Device & Biological applications



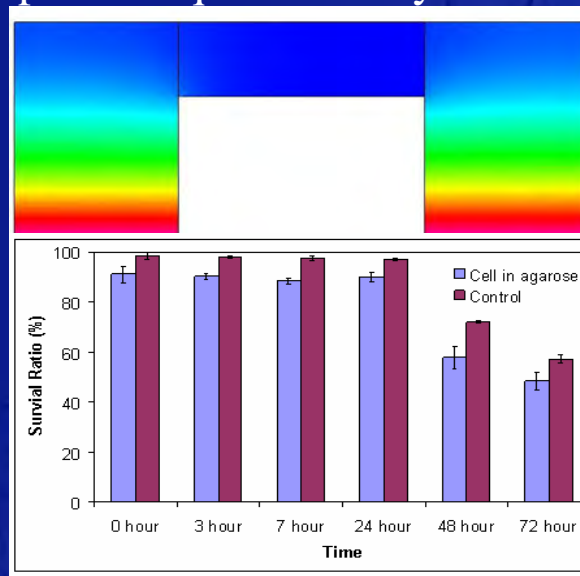
Droplet base microextraction enrichment



Stop flow liquid focus system



High throughput microfluidic microarray



Rotating microfluidic cell array

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Social Service/Outside Recognition

- ◆ 4 NSFC Reviewing Board Members
- ◆ One member of National Academy of Engineering, USA
- ◆ 2 members of Chinese Academy of Sciences



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Why China, why Xiamen Univ.?

- The most dynamic place in most dynamic countries (location).
- One of the most attractive resort cities in China.
- Most beautiful campus in China
- Well-equipped academic and living environment
- A place where students will feel comfortable while at the same time can have an “immigrant mindset.”
- National Academy of Military, West Point



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Coordinator

Associate Professor Hui-Qiong Wang
(PhD, Yale)

Email: hqwang@xmu.edu.cn

Tel: +86 592-2182630



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XMU is the first university in mainland China to participate in the Global E³ program. The XMU program features:

Courses in English

◆ **A wide range of science and engineering courses covering multiple disciplines (Electrical, Electronic, Mechanical, Materials, and Computer);**

(also open to Chinese students --- enhance the interaction between incoming Global E³ students and local students)

◆ **Course instructors with international education and/or teaching experience;**

(previous faculty positions in the US

– Duke University, University of Maryland, UIUC, University of Florida;
PhD degrees from renown universities in the US, UK, Germany, etc)

◆ **Optional art and humanity courses about Chinese culture and business.**

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“Bonus” for incoming Global E³ students

- A three-week “China Study Summer Program” (embracing China and XMU) free of charge.

June 24th-July 12th, 2013

Module One: Chinese Language, 28 class hours

Module Two: Changing China and its Economic Reforms, 27 class hours

- Scholarship and internship opportunities.

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A foreigner-friendly campus for Global E³ students

- More than 4000 international students around
- Seaview on-campus dorms for international students
(dine in the Overseas Student Service Centre or any of the 10 canteens on campus that provide delicious cuisine.)
- Colorful cross-cultural campus life
(Xiamen International Marathon;
Xiamen University Foreign Karaoke Contest; and many others)

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Cross-culture activities



Hakka Earth Castle



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Thank you for your attention!

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