

讓創意 閃爍未來



科學園匯聚超過580間科創企業進行尖端科技研發，我們發展三大科技平台，包括提升效率的**智慧城市**解決方案、提供更優質生活的**健康老齡化**科技，及應用於醫療、家居、教育及工業的**機械人技術**，推動科研發展，讓創意締造更美好未來。



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Organizer:



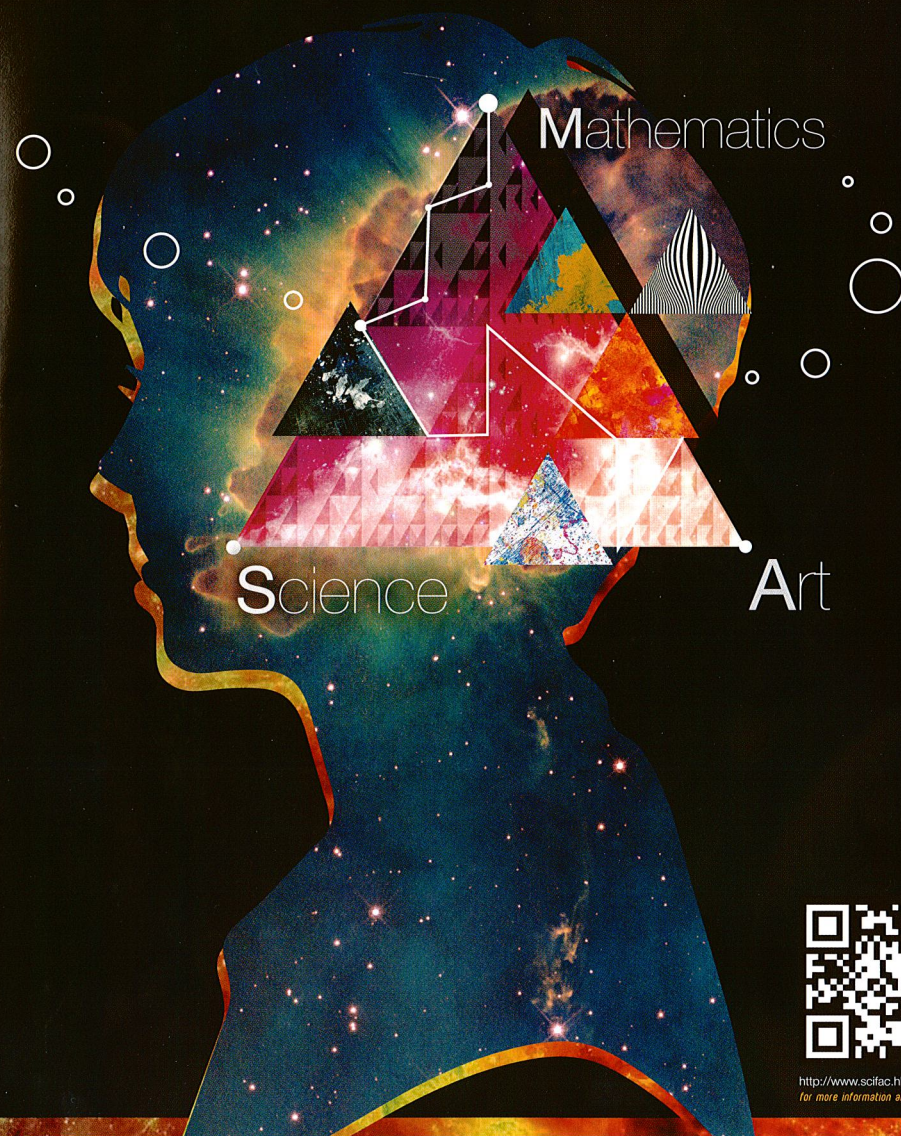
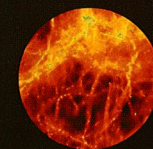
Faculty of Science
The University of Hong Kong

Co-organizer:



SMART

January 16 -17, 2016 SAT&SUN



Mathematics

Science

Art



<http://www.scifac.hku.hk/smart/>
for more information and registration

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Message from Faculty of Science, HKU

Dear SMArt Participants,

It is with my greatest gratitude to welcome you all to the SMArt programme! As the Director of the programme, your support to this event means a lot to me: it shows your affirmation of the effort paid by the University, in particular my colleagues in the Faculty of Science, in bringing our academic expertise to the benefits of our whole society. Academic explorations, including those in science and technology, should not be confined to research institutes and industries. They are relevant to every member of the general public, and their main ideas are not that hard to grasp. I am confident that you will agree with me on these points after participating in the SMArt programme!

It is indeed our honour to team up with the Hong Kong Science & Technology Parks Corporation (HKSTP), which shares with us the same vision in scientific and technological literacy, in co-organizing this event. HKSTP has been well-known for years for their continuous effort in incubating a favourable local ecosystem for technology, and in promoting technological innovation in Hong Kong. The large number of technology companies facilitated by HKSTP has once again reminded us that science and technology are not merely something we learn from school: they have everything to do with our daily lives! With their expertise, HKSTP has definitely elevated this event to a whole new level!

Science, mathematics, and art (SMArt) are never isolated subjects, but rather essential and interconnected aspects of our society. Without understanding how a camera works, it would be impossible for professional photographers to make the best use of their camera in taking the photograph of their lifetime. Through the SMArt programme, I am sure the connections between these disciplines will become clear to you.

Enjoy being "SMArt"!

Best regards,

Dr. Benny Ng

Director of Science, Mathematics, and Art (SMArt) Programme
The University of Hong Kong



Message from HKSTP

Dear SMArties,

Welcome to Hong Kong Science Park. It is a community with more than 550 technology companies, from tech giants to start-ups, and over ten thousands of innovation and technology talents working here.

To make the Hong Kong innovation and technology ecosystem strong and vibrant, we are committed to nurturing the next generation of talents by boosting up their interest and knowledge. SMArt programme is an elaborately planned activity jointly presented by the Faculty of Science, the University of Hong Kong and Hong Kong Science and Technology Parks Corporation (HKSTP). The two-day programme will surely amaze you with various science and mathematics workshops. I am sure you will find the whole programme extraordinarily fascinating through the injection of art and play elements.

Throughout the workshops, participants will learn a wide range of science principles and concepts, such as ferrofluid and supersaturation. You will also get a chance to make a pinhole camera by yourself. The programme's finale is building the largest balloon pyramid at Science Park. Students will learn about fractal, which is a natural phenomenon demonstrating self-similar pattern, and experience the truly hands-on exercise.

Last but not least, let me freshen up one of Steve Job's most inspirational quotes "Stay hungry, stay foolish" and twist it to "Stay hungry, stay curious". Curiosity is an important trait for every scientist and innovator. From now on, look out for your interest, stick to it and stay curious. I believe all of you will shine in your own way in the future.

Yours Sincerely,

Mr. Allen Ma

Chief Executive Officer
Hong Kong Science and Technology Parks Corporation



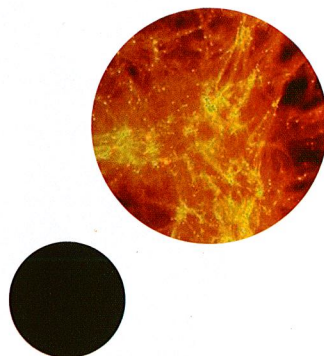
List of Participating Schools

Canadian International School of Hong Kong
Chinese International School
Creative Secondary School
Diocesan Girls' School
Elegantia College
Good Hope School
Holy Trinity College
Hong Kong French International School
HKMA David Li Kwok Po College
HKMA K S Lo College
International Christian School
King's College
Korean International School
La Salle College
Law Ting Pong Secondary School
Maryknoll Convent School (Secondary Section)
Marymount Secondary School
Our Lady's College
PLK No.1 W.H. Cheung College



List of Participating Schools

Sacred Heart Canossian College
 Shatin Tsung Tsin Secondary School
 S.T.F.A. Leung Kau Kui College
 South Island School
 St. Mary's Canossian College
 St. Paul's College
 St. Paul's Convent School
 St. Paul's Secondary School
 St. Stephen's College
 True Light Girls' College
 True Light Middle School
 TWGHs Lo Kon Ting Memorial College
 TWGHs Wong Fut Nam College
 Victoria Shanghai Academy
 Wan Yan College, Hong Kong
 Wah Yan College, Kowloon
 West Island School
 Yan Oi Tong Tin Ka Ping Secondary School
 Ying Wa Girls' School
 YMCA of Hong Kong Christian College



Programme Rundown Day 1 (January 16, 2016) @ HKU

Time	Event	Venue
08:30 - 09:00	Registration	Outside Hui Pun Hing Theatre
09:00 - 09:15	Opening Ceremony	Hui Pun Hing Theatre
09:15 - 09:35	Lecture 1: The Science of Ceramics	Hui Pun Hing Theatre
09:35 - 09:55	Lecture 2: Ferrofluid and Superhydrophobic Surfaces	Hui Pun Hing Theatre
09:55 - 10:15	Group Photo Taking and Tea Break	Hui Pun Hing Theatre
10:15 - 10:35	Lecture 3: Art and Science of Sugar	Hui Pun Hing Theatre
10:35 - 10:55	Lecture 4: Secret Behind Pinhole Camera	Hui Pun Hing Theatre
10:55 - 11:00	Briefing on the Workshops	Hui Pun Hing Theatre
11:00 - 12:30	Parallel Workshops	
	Workshop 1A: Making Artistic Ceramics for Fun and Practical Use	Main Building 141 & Main Building 142
	Workshop 1B: Liquid Magnet and Water-hating Super Coatings	Hui Oi Chow 212
	Workshop 1C: The Sweet Adventure: Creating Your Own Sugar Art	Kadoorie Lab C & D
	Workshop 1D: PinHoleCam-ology: A Moment of Hong Kong in a box	RMS 302
12:30 - 14:00	Lunch	
14:00 - 17:30	Parallel Workshops (Continued)	Various venues
17:30 - 17:45	Closing of Day 1	Knowles Building 223

Programme Rundown

Day 2 (January 17, 2016) @ Science Park

Time	Event	Venue
08:30 - 09:00	Registration	Charles K.Kao Auditorium, Science Park Phase 2
09:00 - 09:20	Lecture 5: What is Fractal?	
09:20 - 09:30	Briefing on Workshop 2	
09:30 - 12:00	Workshop 2: Building the Largest Balloon Pyramid	
12:00 - 13:30	Lunch	
13:30 - 16:30	Workshop 2 (Continued)	
16:30 - 17:30	Closing Ceremony	

Lecture 1: Science of Ceramics

Dr. Edmond Leung

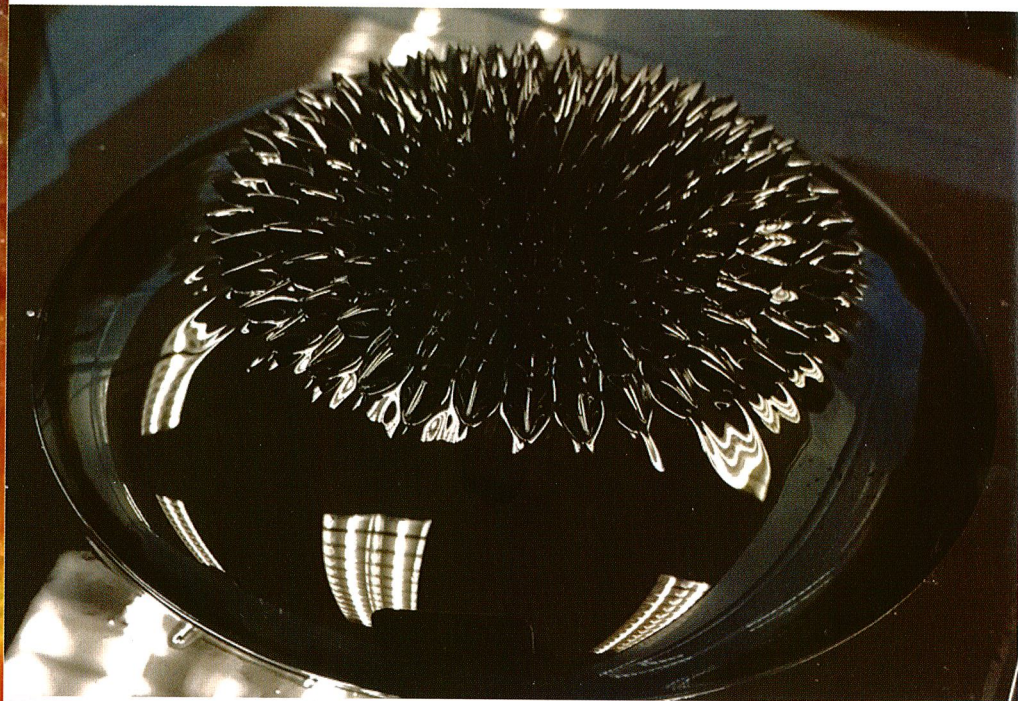


Ceramics have been known to mankind for millennia. The word 'ceramic' comes from the Greek word meaning 'pottery', and pottery is one of the oldest human technologies. So why did human pick ceramics and use them as bulk materials in pottery, construction, decoration, etc.? What special properties do ceramics possess? Apart from the well-known, classic uses of ceramics, there are also advanced ceramic materials that are now well established in many areas of everyday use such as electronics, automotive, aerospace and so on. In this talk, we will investigate this exciting class of material and discuss some science behind ceramics as well as processing of ceramic materials.



Lecture 2: *Ferrofluid and Superhydrophobic Surfaces*

Dr. Benny Ng



The science of ferrofluid will first be introduced. Ferrofluid is a liquid containing numerous tiny magnets that can change its shape under the influence of magnetic field. The physical properties of ferrofluid and the applications based on these properties will be discussed.

The concept of super-hydrophobic surfaces will then be introduced. Super-hydrophobic surfaces are highly water repelling and can be found in nature such as lotus leaf and insect legs. Examples taken from nature and recent research based on this property will be illustrated.

Lecture 3: *Art and Science of Sugar*

Prof. Aleksandra B. Djurišić

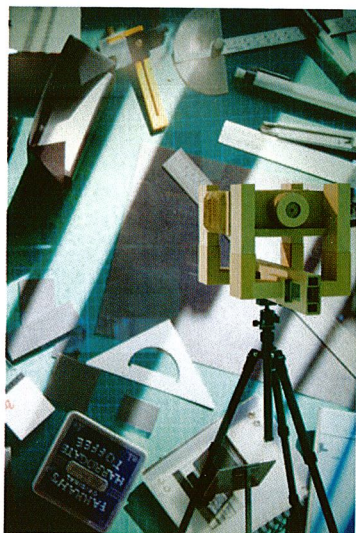


Sugar is a commonly used kitchen ingredient. It is a carbohydrate which provides sweet taste. Thus, it is typically used in desserts to provide both sweet flavour as well as for artistic decoration due to its unique properties. Science of sugar will be briefly introduced, followed by demonstrations of caramelization of sugar, sugar bubbles, spun and pulled sugar.



Lecture 4: Secret Behind Pinhole Camera

Dr. Chi-Wang Chan



When you were moving your finger to capture an image with your camera in less than a second, could you imagine how much science was involved in the process? Light falls onto the film and our eyes according to the law of optical physics. The film captures the image chemically while the retinae of our eyes react biologically. No matter how complicated the image-capturing device we were using is, we have to follow the law of science. In this talk, we will use the pinhole camera as an example to demonstrate how those sciences work together to achieve the image capturing function.

Lecture 5: What is Fractal?

Dr. Rachel Lui

Fractal is a natural phenomenon which demonstrates self-similar pattern. This pattern can be found in:

Plants:

pineapple, Romanesco broccoli, cauliflower, etc.

Human body:

heart rates, heart beats, DNA, blood vessels, pulmonary vessels, branching of tracheal tubes, proteins

Nature:

mountain ranges, craters, coastlines, snowflakes, ocean waves, rings of Saturn

Fractal often describes the real world better than traditional science. It helps to understand the complex chaotic dynamic systems. Students will learn in the lecture about the properties of fractal and its scientific application.

Workshop 1A: Making Artistic Ceramics for Fun and Practical Use

Mr. Terence Lee



Abstract for the workshop

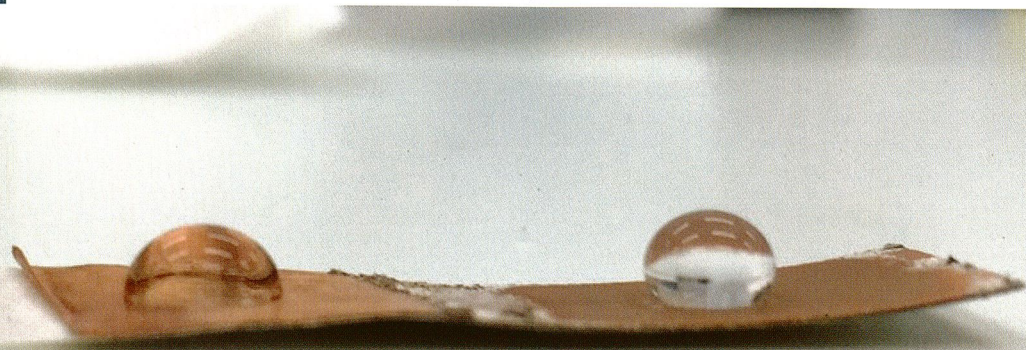
Ceramics was an old material used by ancient people more than ten thousand years ago, and it is still a part of our everyday lives. Pottery is one good example that a ceramic item can both be a beautiful work of art and have various functions. So, what ceramics actually is? How did ancient people develop techniques to create ceramic objects? Is there science behind these processes? In this workshop, you will explore answers to these questions and have an opportunity to work with your creative team members to construct an artistic ceramic object with applications that would only be limited by your imagination.

Biography of the PIC

Terence Lee is a native Hong Kong established painter and ceramic artist. He graduated from California College of Arts and Crafts in U.S.A. in 1983, majoring in contemporary ceramics and painting. After he came back to Hong Kong in 1984, he set up his own studio and taught at various art institutes including Hong Kong Arts Centre, the Chinese University of Hong Kong, HKU School of Professional and Continuing Education (SPACE). He had his solo exhibition in 1984, 1989 and 2007, as well as participating in a lot of group exhibitions both in Hong Kong and oversea. In 1992 he and six other local potters founded the Contemporary Ceramic Society (HK), with Terence elected as the founding chairman. His works are collected by Hong Kong Museum of Art, Hong Kong Heritage Museum, National Museum of Chinese History in Beijing, as well as many local and private collectors. In 1995 Terence established Gitone Ltd., which has become a renowned place for art and dining.

Workshop 1B: Liquid Magnet and Water-hating Super Coatings

Dr. Edmond Leung



Abstract for the workshop

Even though magnet is a very common item, it is not usual for us to see magnet in liquid form. Ferrofluid is precisely one such object: it is a liquid metal solution that can be strongly magnetized in the presence of a magnetic field and, in fact, has been widely used in electronic devices as well as mechanical and aerospace applications. Even water, a liquid that we are familiar with, exhibits interesting behaviour: it can behave very differently on different surfaces, for instance, on paper versus on a lotus leaf. The water-hating (or super-hydrophobic) property of lotus leaves has actually driven the development of self-cleaning coatings. Do you want to make your own liquid magnet and water-hating coating? In this workshop, in addition to learning the science behind the amazing properties of ferrofluid and super-hydrophobic surfaces, you will also be able to use them to make your own artwork.

Workshop 1C: The Sweet Adventure: Creating Your Own Sugar Art

Doux and Dr. Jessica Leung



Abstract for the workshop

In this workshop, participants will make use of the unique properties of sugar to create their masterpiece of art that is both decorative and edible. Sugar artists from Doux will teach participants various sugar art techniques and share with them the secret of making sugar sculptures! By the end of the workshop, participants will understand the underlying principles of sugar science and master the basic skills of sugar art.

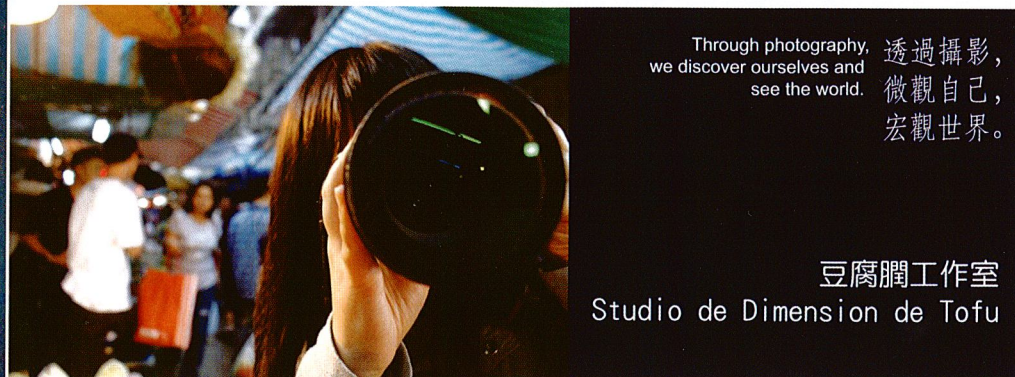
Biography of the PIC

Vimi's enthusiasm towards desserts was formed at a young age. Despite her family's discouragement, she has endeavoured to pursue her dream through working in the dessert industry upon graduation. Her experiences of serving in various 5-star hotels and Michelin-starred restaurants have equipped her with an exquisite taste and skillful art in dessert-making.

Keith has been in the industry for 11 years. Having worked in a renowned restaurant of Pearl in Australia and influenced by the local food culture, he has developed an expertise in integrating seasonal and international ingredients into his desserts. Upon his return to Hong Kong, he underwent training in various hotels and opened his nouveau dessert restaurant Doux with the goal to "promote desserts as something for proper meals and an enjoyment in the cosy ambience".

Workshop 1D: PinHoleCam-ology: A Moment of Hong Kong in a box

Studio de Dimension de Tofu and Dr. Chi-wang Chan



Abstract for the workshop



豆腐潤工作室
Studio de Dimension de Tofu

When we are enjoying the convenience brought by digital photography nowadays, are we missing out the fun and joy from traditional photography?

In the Pinholecam-ology workshop, we will return to the basic of photography and will construct our own metal box pinhole camera.

We will then use our handmade camera to get a taste of each small step in photography. We will go around to take photos, process films in the dark room together, appreciate our city through our images and share the joy of getting surprising images.

This workshop is a journey about science, art and our society. Enjoy!

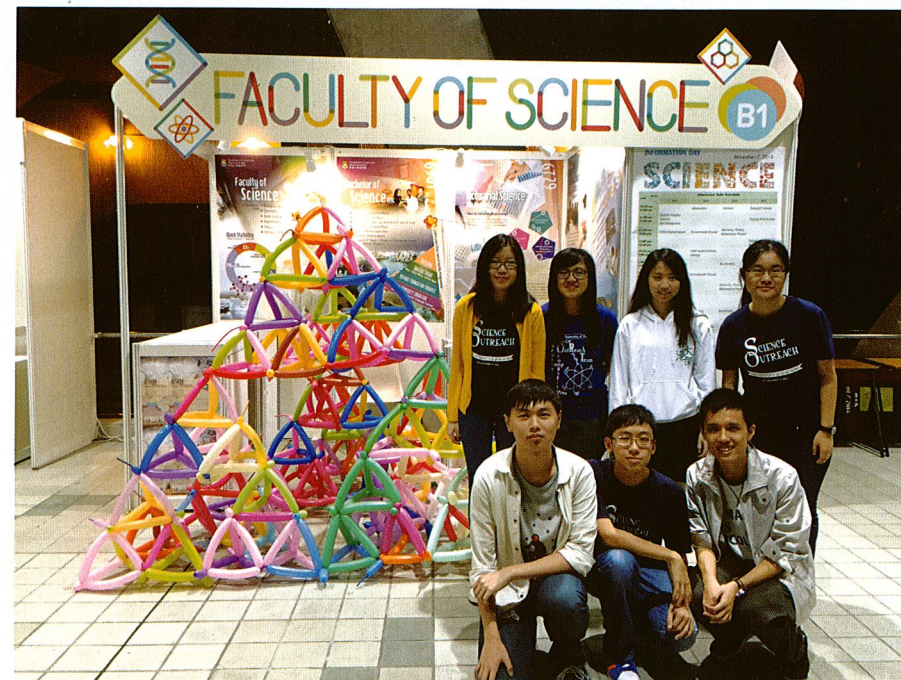
Biography of the PIC

Studio de Dimension de Tofu is formed by Ceci Liu (Photography Artist) and Stanley Ng (Photographer) who focus on art activities, creation, exhibitions and workshops related to image creation (and hence photography), in order to enable more varieties of people to experience community photography, pinhole camera making. They also hope to offer opportunities in exchanging photography concepts and ideas, and thus sharing the joy and meanings of photography.

Studio de Dimension de Tofu designs, organizes and provides a variety of "Foto Lab" workshops, including different forms of pinhole photography, darkroom experiences, community pop-up album making, community image research, digital photography and videography, as well as training program related to photography. They welcome collaboration with schools, organizations and institutions.

Workshop 2: Building the Largest Balloon Pyramid

Dr. Rachel Lui



Abstract for the workshop

In this workshop, we will build a Sierpinski pyramid using balloons. Basically this fractal object is formed by cutting out pieces of a pyramid. Through our collective efforts, see how big a pyramid we can make together!

Acknowledgements

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Leung, Keith	Wu, Wai Chung Marco
Leung, Chit Yan Eunice	Yam, Yin Yee

Thank You!

List of Sponsors

ILLUSTRATION & DESIGN

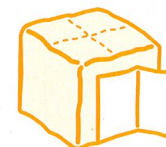


CARROUSEL STUDIO

HAPPY & CREATIVE SINCE 2010



GITONE

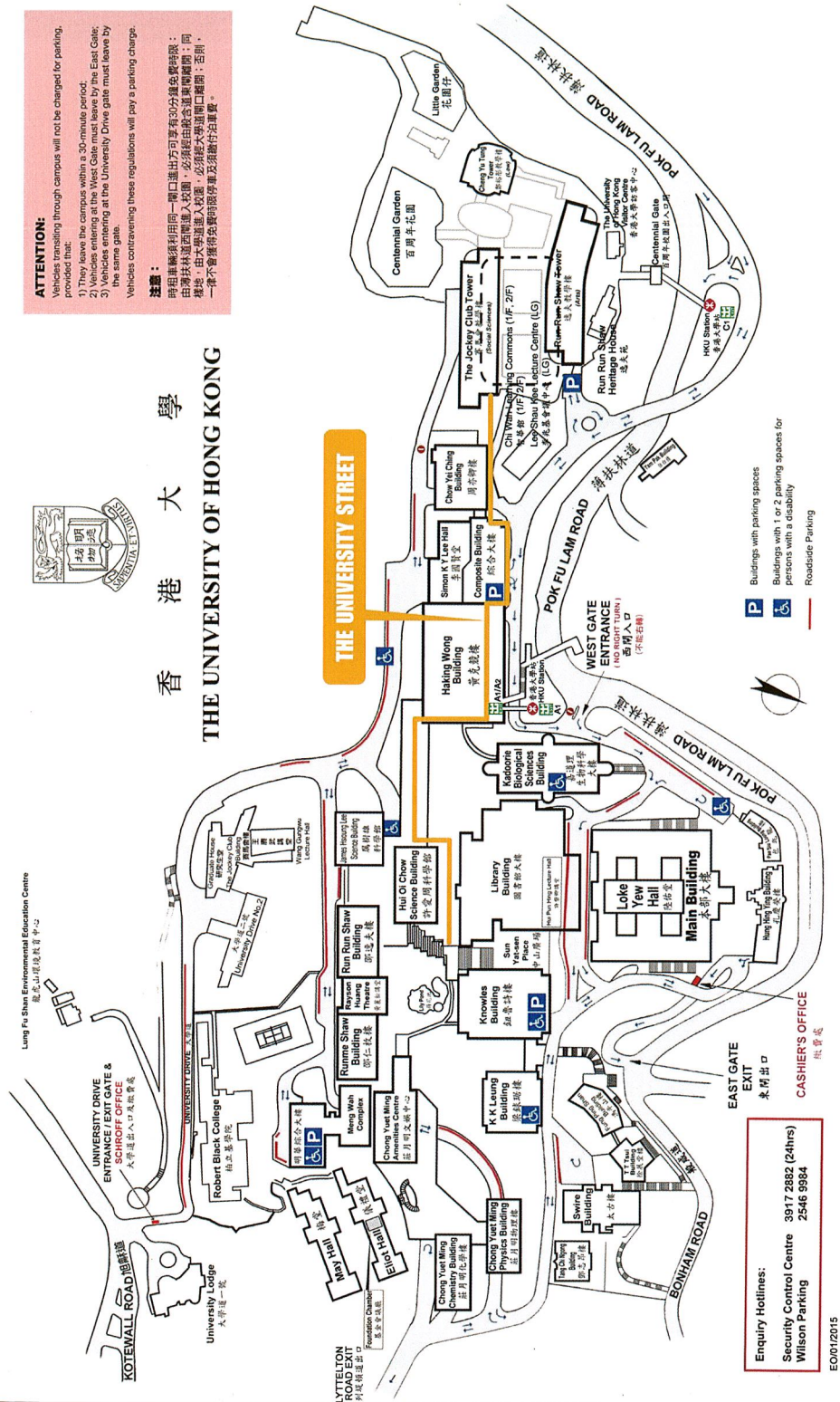


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Lung Fu Shan Environmental Education Centre
龍虎山環境教育中心



Enquiry Hotlines:
Security Control Centre 3917 2882 (24hrs)
Wilson Parking 2546 9984

E001/2015

科學園俯瞰圖 Science Park Location Map



- | | | | |
|---|--|---|--|
| 1W 核心大樓二座
Core Building 2
科技大道西 1 Science Park West Avenue | 10W 浚湖樓
Lakeside 2
科技大道西 10 Science Park West Avenue | 1E 核心大樓一座
Core Building 1
科技大道東 1 Science Park East Avenue | 12E 海濱大樓一座
Harbour View 1
科技大道東 12 Science Park East Avenue |
| 2W 生物資訊中心
Bio-Informatics Centre
科技大道西 2 Science Park West Avenue | 11W 生物科技中心二座
Biotech Centre 2
科技大道西 11 Science Park West Avenue | 2E 光電子中心
Photonics Centre
科技大道東 2 Science Park East Avenue | 16E 海濱大樓二座
Harbour View 2
科技大道東 16 Science Park East Avenue |
| 5W 企業廣場
Enterprise Place
科技大道西 5 Science Park West Avenue | 12W 科技大道西 12
12 Science Park West Avenue | 3E 無線電中心
Wireless Centre
科技大道東 3 Science Park East Avenue | 18E 綠景樓
Green 18
科技大道東 18 Science Park East Avenue |
| 6W 集成電路開發中心
IC Development Centre
科技大道西 6 Science Park West Avenue | 15W 科技大道西 15
15 Science Park West Avenue | 5E 飛利浦大廈
Philips Electronics Building
科技大道東 5 Science Park East Avenue | 20E 科技大道東 20
20 Science Park East Avenue |
| 9W 生物科技中心一座
Biotech Centre 1
科技大道西 9 Science Park West Avenue | 16W 科技大道西 16
16 Science Park West Avenue | 6E 新科中心
SAE Technology Centre
科技大道東 6 Science Park East Avenue | 22E 科技大道東 22
22 Science Park East Avenue |

主要會議及展覽場地 Major MICE Venues

- | | | |
|---|---|--|
| 1E 會議中心 1
Convention Centre 1
G/F 展覽廳 Exhibition Hall
G/F 中庭長廊 Atrium Link
G/F 會議廳 01 Conference Hall 01
G/F 會議廳 02 Conference Hall 02
1/F 會議廳 03 Conference Hall 03 | 10W 會議中心 2
Convention Centre 2
G/F 中庭長廊 Atrium Link
G/F 會議廳 01 Conference Hall 01
G/F 會議廳 02 Conference Hall 02
1/F 會議廳 03 Conference Hall 03 | 12W 會議中心 3
Convention Centre 3
1/F 大廳寬廳 Grand Hall
1/F 會議廳 Function Hall
1/F 會議廳 31 / 32 Meeting room 31 / 32
G/F 大廣場 (戶外) Grand Plaza (Outdoor) |
|---|---|--|

如欲租賃場地或查詢有關資料，可致電 2629 6809 / 2629 6764 與我們的圖紙推廣部聯絡。您也可以把您的查詢以電郵形式傳送到 mice@hkstp.org。For venue booking or related enquiries, please contact our Park Marketing team at 2629 6809 / 2629 6764. You may also send your enquiries to us by e-mail at mice@hkstp.org.

Notes

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