Earthquake Detector Design Competition
地震探測器設計比賽

Competition Briefing
比賽簡介

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Organizer and Supporting Organization
主辦單位及支持機構

- Faculty of Engineering, The University of Hong Kong
  香港大學工程學院
  http://engg.hku.hk

- Hong Kong Observatory
  香港天文台
  http://www.hko.gov.hk

- Hong Kong Meteorological Society
  香港氣象學會
  http://www.meteorology.org.hk

- Supported by Community Weather Information Network (CoWIN)
  社區天氣資訊網絡
  http://weather.ap.polyu.edu.hk

- Funding Supported by HKU Knowledge Exchange Fund
  香港大學知識交流基金資助
  http://www.ke.hku.hk

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Objectives 目的

- To enhance the knowledge of local primary and secondary school students and teachers, and the public in general, in earthquake science, and arousing their interest in engineering and meteorological / oceanographic instrumentation; and
  給予中小學師生以至大眾關於地震的知識，
  以及提升他們對工程學及氣象 / 海洋學儀器的興趣；及

- To increase public awareness and preparedness towards natural disasters.
  喚起大眾對自然災害的關注，以提高警覺及有所準備。

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Categories 參賽組別

- Junior and Senior 初級組 及 高級組
- We do not categorize the teams using class level or age. Whether a team is Junior or Senior is determined by whether the earthquake detector can automatically record the data.
  不是以班級或年齡來區分參賽組別，而是以所設計的地震探測器能否自動收集和處理數據來決定。
- The group is only required to specify which category they are in during submission of “Intention to submit form”, according to the type of earthquake detector designed and implemented.
  報名時隊伍無需決定參賽組別，隊伍只須於提交「作品提交意向表格」時根據參賽作品決定組別。

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Requirements 作品要求 R-01 R-02

- R-01 The earthquake detector should be capable of detecting the existence of earthquake and report automatically (senior teams) or when checked manually (junior teams).
  地震探測器需能自動（高級組）或經人手（初級組）探測有否發生地震。

- R-02 There is no restriction on the choices of materials for the earthquake detector. The cost for the design and fabrication of the device, excluding computers (for data archival and analysis, if applicable), should be less than HKD 1500. There will be no subsidy from organizers for making the earthquake detector.
  製造地震探測器的材料並沒有限制，所需費用應少於港幣1500元（電腦設備等除外）。主辦單位並不會給予金錢上的補助。

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Requirements 作品要求 R-03

- R-03 The report should be concise, preferably with a length of no more than 10 pages (cover page excluded, diagrams included) and in PDF format.
  文字報告宜言簡意賅，不可多於十頁（包括圖表,不包括封面頁）。隊伍需要提交PDF格式的報告。

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Requirements 作品要求 R-04 R-05

- R-04 Digital photos of the earthquake detector should be delivered (in zip format), together with the report, before the deadline of submission.
  提交報告時亦需提交參賽作品之照片，請將照片儲存在 zip 檔案提交。

- R-05 Submission of report and photos should be sent to the specified email address on or before the submission deadline, otherwise it will not be entertained.
  文字報告及相片 zip 檔需於限期前電郵到指定電郵地址。

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Requirements 作品要求 R-06

- R-06 Each group is required to attend the project exhibition. Judging will be held during the exhibition. At least one team member of the group must attend the exhibition. They are expected to answer questions raised by the judges and visitors.

  參賽隊伍需出席作品展覽。展覽當天將進行評審， 展覽期間參賽隊伍需派至少一位隊員介紹作品，並回答評判及參觀人士的提問。

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Requirements 作品要求 R-07 R-08

- Senior teams only 高級組附加要求
- R-07 The earthquake detector should be completely autonomous in operation
  地震探測器應能全自動操作。
- R-08 The system should be capable of storing the readings onto digital storage media.
  量度得的數據可儲存在數碼儲存媒體內。

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Judging Criteria 評審準則

- J-01 **Research 報告內容**
  Content of report, data collection and testing methodologies.
  報告內容、數據搜集及測試方法。
- J-02 **Innovation 創意**
  How innovative ideas have been applied in the design of earthquake detector.
  地震探測器的創意。
- J-03 **Effectiveness 效能**
  How the earthquake detector responds to vibration effectively under different situations.
  地震探測器能否在不同的情況下有效地探測振動。
- J-04 **Appearance 外觀**
  Does the instrument look sleek, neat and tidy?
  地震探測器的外觀。
- J-05 **Presentation 介紹技巧**
  Performance in the project exhibition.
  參賽隊伍的介紹技巧。

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Awards 獎項

- Champion 冠軍
- First runner-up 亞軍
- Second runner-up 季軍
- The Most Innovative Earthquake Detector Award 最佳創意獎
- The Most Attractive Earthquake Detector Award 最優外觀獎
- The Most Effective Earthquake Detector Award 最高效能獎
- The Best Presentation Award 最佳演繹獎
- My Favourite Earthquake Detector Award
  我最喜愛的地震探測器

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Certificate of Participation 參與證書

- Certificate of Participation will be presented to each member of the team if the team has:
  - submitted the report before the deadline; and
  - attended the exhibition (at least one member of the team) with the designed earthquake detector.
- 符合以下要求的隊伍，其隊員皆可獲頒參與證書一張：
  - 於限期前提交作品報告及
  - 出席作品展覽並提交作品。

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Certificate of Attendance 出席證書

- Certificate of Attendance will be presented to participants if:
  - his/her team is eligible for receiving the “Certificate of Participation”; and
  - attended the corresponding event.
- 符合以下要求的參加者可獲頒該活動的出席證書：
  - 符合獲頒「參與證書」的要求及
  - 曾出席該活動。

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Project Exhibition, Judging and Award Presentation
作品展覽、評審及頒獎典禮

- All participating teams are required to attend the Project Exhibition.
  參賽隊伍需出席作品展覽。
- Judging will be done in the morning. The results will be announced in the afternoon, and awards will be presented.
  評審將於上午進行，比賽結果將於下午作品展覽完結前公布，並頒發獎項。
- Open to the public. Parents, teachers and students are welcome.
  作品展覽將開放給公眾參觀，歡迎家長、老師及同學出席。
- All the visitors can vote for the "My Favourite Earthquake Detector" Award winner
  入場人士將投票選出「我最喜愛的地震探測器」的得獎隊伍。
- 2017-04-29[Sat] / 2017-05-06[Sat] (Tentative 暫定)
  09:30 - 17:30
- At least one team member of the group must attend the exhibition.
  展覽期間參賽隊伍需派至少一位隊員介紹作品。

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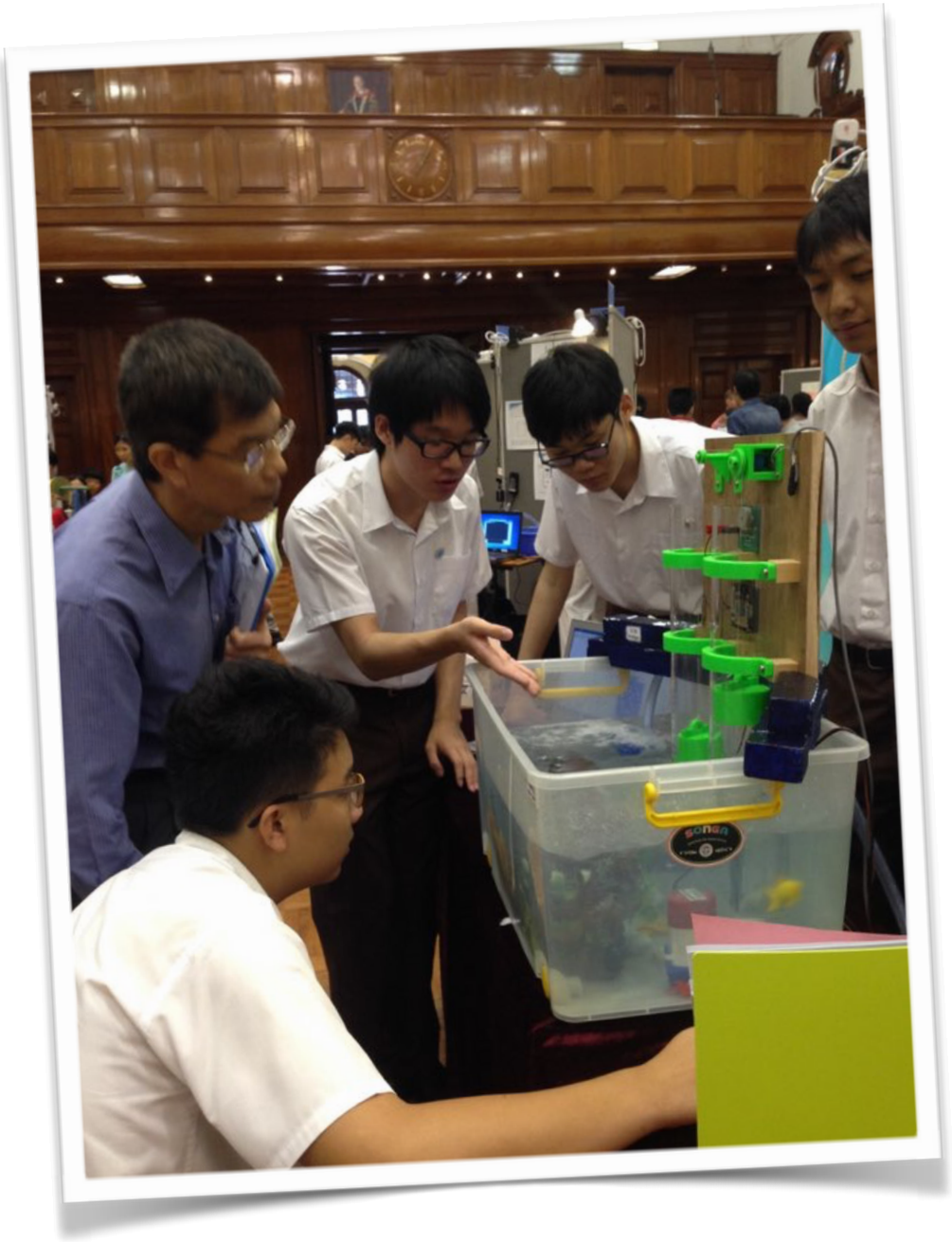

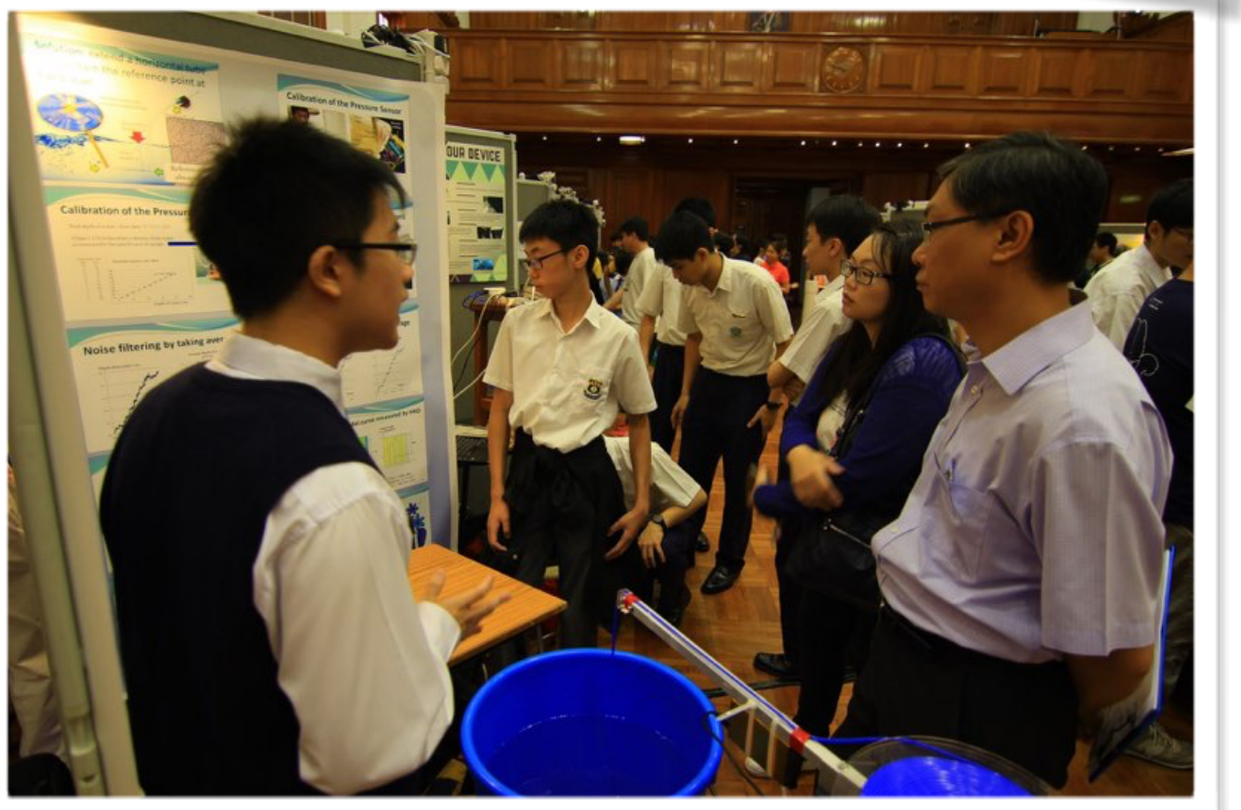

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Faculty of Engineering
THE UNIVERSITY OF HONG KONG

香港天文台
HONG KONG OBSERVATORY

香港氣象學會
Hong Kong Meteorological Society

Earthquake Detector Design Competition
地震探測器設計比賽

http://www.cs.hku.hk/~quake/

比賽組別 CATEGORIES

- **初級組 JUNIOR** 設計及製造一台地震探測器 Design and implementation of an earthquake detector
- **高級組 SENIOR** 設計及製造一台自動地震探測器 Design and implementation of an automatic earthquake detector

相關活動 ACTIVITIES

「地震及其探測方法」講座
「自製地震探測器：軟件篇」講座
「自製地震探測器：硬件篇」講座
參觀香港天文台

Talk on “Earthquake and Its Detection”
Talk on “DIY Earthquake Detector: The software side”
Talk on “DIY Earthquake Detector: The hardware side”
Visit to Hong Kong Observatory

截止報名
REGISTRATION
24 Oct
2016

提交
SUBM
27 Oct

查詢
Enquiry | quake@cs.hku.hk

www.facebook.com/EarthquakeDetectorDesignCompetition/

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Eligibility to join the Project Exhibition
出席作品展覽資格

- All participating teams are required to submit "Intention to submit form" on or before 2017-04-01[Sat]:
  參賽隊伍需於 2017-04-01[Sat] 或之前提交「作品提交意向表格」：
  - Category 組別：Junior 初級組 / Senior 高級組
  - Estimated size of the earthquake detector (length × width × height)
    作品的估計尺寸 (長 × 闊 × 高)
  - A photo of the earthquake detector (can be incomplete)
    一張作品相片（可以是未完成的）
- Method of submission 提交方法：
  Email 電郵：quake@cs.hku.hk
- The organizer will arrange the exhibition according to the submitted information. The team will not be eligible to join the exhibition if the team have not submitted the required information before the deadline.
  主辦單位會根據上述資料作出展覽安排，如未能於限期前提交資料則不能獲得作品展覽資格。

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Submission of report 提交作品文字報告

- Report 文字報告
- Photos of the designed earthquake detector in zip format
  作品照片（儲存於 zip 檔案）
- Deliverable submission form 提交作品表格
- Submission of report Deadline 提交作品文字報告限期：
  2017-04-24[Mon] 17:00
- Method of submission 提交方法：
  Email 電郵：quake@cs.hku.hk

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Submission of earthquake detector
提交作品

- All participating teams are required submit the earthquake detector on the date of Project Exhibition.
  參賽隊伍需於作品展覽當天提交作品。

- 2017-04-29[Sat] / 2017-05-06[Sat] (Tentative 暫定)

09:30 - 17:30

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Upcoming events 活動預告

- 2016-11-19[Sat]
  Session 1: 14:00-15:30
  Session 2: 16:00-17:30 (If Session 1 is full 如第一場滿座)
  Talk on "DIY Earthquake Detector: The software side"
  「自製地震探測器：軟件篇」講座

- Date of registration 報名日期：
  2016-11-07[Mon] - 2016-11-09[Wed]

- Please follow the competition Facebook page for the link to registration website.
  請留意比賽 Facebook 專頁公佈報名網址連結。

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Upcoming events 活動預告

- 2016-12-03[Sat]
  Session 1: 14:00-15:30
  Session 2: 16:00-17:30 (If Session 1 is full 如第一場滿座)
  Talk on "DIY Earthquake Detector: The hardware side"
  「自製地震探測器： 硬件篇」講座

- Date of registration 報名日期：
  2016-11-21[Mon] - 2016-11-23[Wed]

- Please follow the competition Facebook page for the link to registration website.
  請留意比賽 Facebook 專頁公佈報名網址連結。

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Upcoming events 活動預告

- Project Exhibition, Judging and Award Presentation
  作品展覽、評審及頒獎典禮

- 2017-04-29[Sat] / 2017-05-06[Sat] (Tentative 暫定)
  09:30 - 17:30

- Details will be announced two weeks before the exhibition.
  詳情於展覽前兩星期公佈。

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http://www.cs.hku.hk/~rain/

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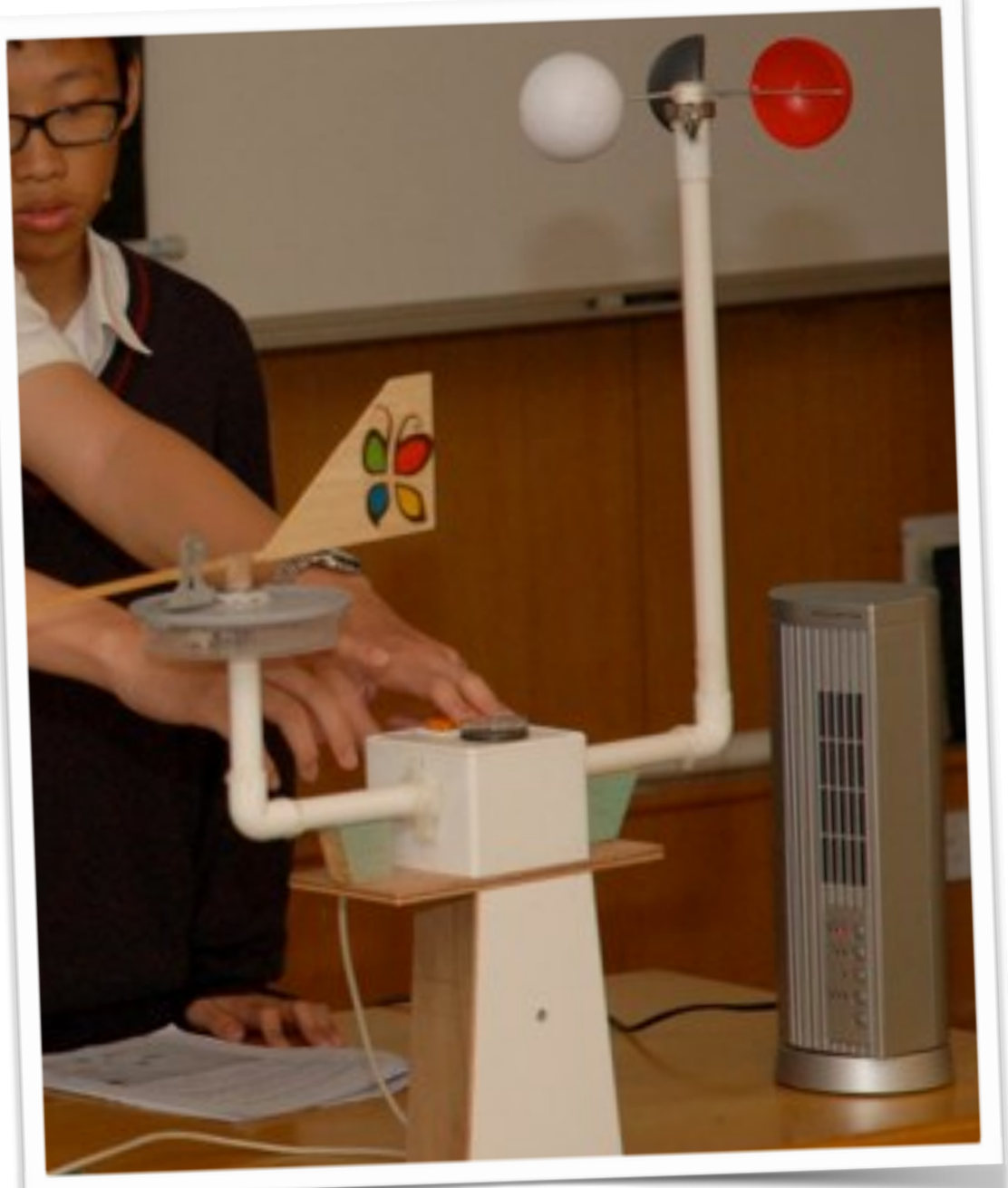

http://www.cs.hku.hk/~wind/

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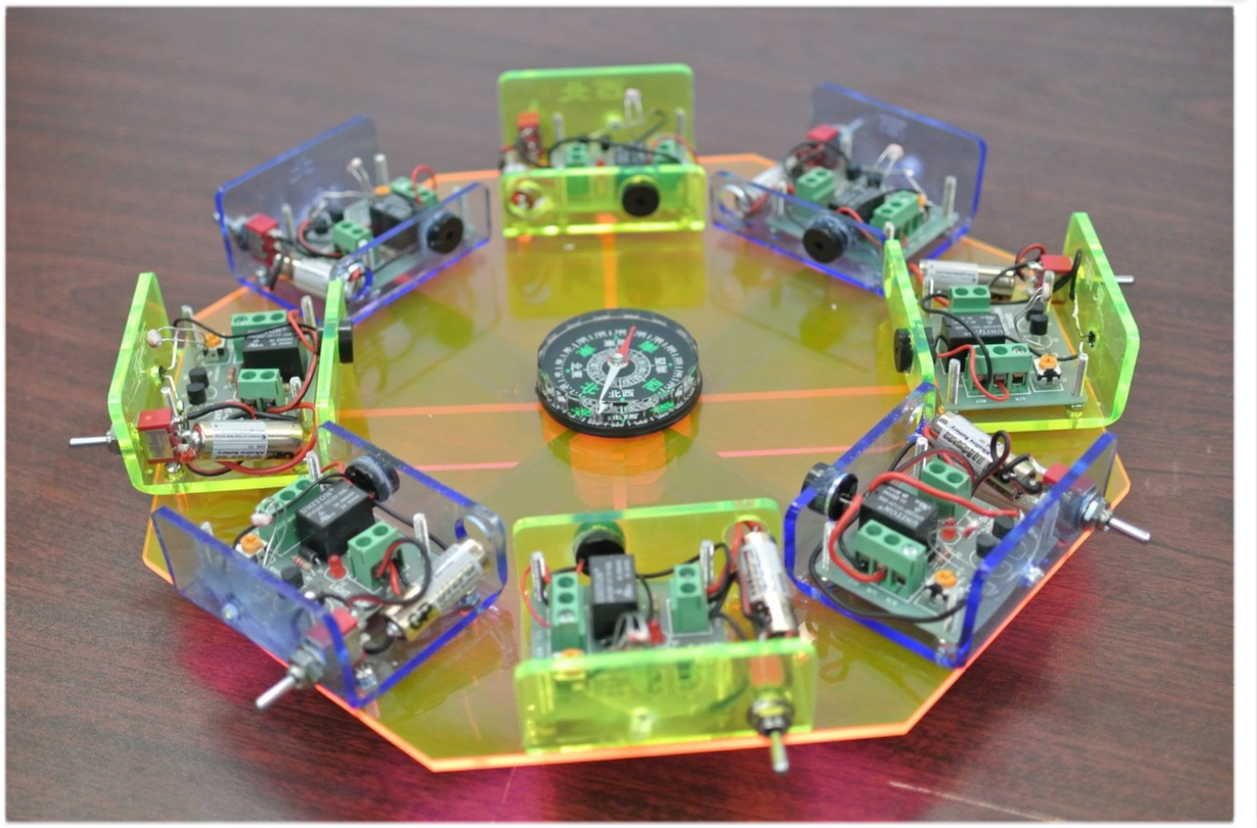

http://www.cs.hku.hk/~light

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http://www.cs.hku.hk/~sealevel

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Links 連結

- Competition website 比賽網頁
  http://www.cs.hku.hk/~quake/
- Facebook page
  https://www.facebook.com/EarthquakeDetectorDesignCompetition/
- Facebook group
  https://www.facebook.com/groups/EarthquakeDetectorDesignCompetition/
- Email 電郵
  quake@cs.hku.hk

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THANK YOU

Questions?

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