International Joint Research Laboratory of Earthquake Engineering (ILEE)

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International Joint Research Laboratory of Earthquake Engineering (ILEE)
ILEE - International collaboration

TIT (Japan)

MAE (UIUC)

PEER (UCB)

MCEER (Buffalo)

SAEC (Chile)

QuakeCoRE (NZ)

Canada
ILEE已有成果

• 已获得教育部和科技部认证:

中华人民共和国教育部

教技函[2015]67 号

教育部关于“高端装备创新设计制造国际合作联合实验室”等 17 个联合实验室
立项建设的通知

上海市教委、江苏省教育厅、广东省教育厅、有关高等学校：

根据《高校国际合作联合实验室建设与管理办法》的规定，在
有关高校自主申报基础上，经形式审查和专家现场论证，决定立项
建设清华大学“高端装备创新设计制造国际合作联合实验室”等 17
个联合实验室（以下简称联合实验室）。有关事项通知如下：

一、依托高校要切实落实联合实验室建设主体责任，保障经费
投入和政策支持，努力汇聚多方资源，支持联合实验室开展合作研
究和吸引高端人才。在聘用、薪酬、评价等方面创新机制，按需改
革，为建设一流实验室提供物质条件和制度基础。地方教育行政
部门要将联合实验室作为一流大学和一流学科建设的重要内容予
以规划和统筹。

二、联合实验室要完善三年建设规划，加强与外方单位的战
略

“地震工程国际联合实验室”获得教育部认证

“地震工程国际联合研究中心”获批国家国际科技合作基地
ILEE facilities

20 m

70 m
ILLEE facilities
ILEE facilities
ILEE facilities
ILEE facilities

- T-shape wall, 30m long 15m high
- Shear strength of 600ton (at the top level of reaction wall)
- Bending moment strength of 9000ton-m.
ILEE facilities
ILEE facilities
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- 世界顶尖实验条件: Tongji University, China
• 世界顶尖实验条件: PEER Center, USA
ILEE

- 世界顶尖实验条件: EUCENTRE, European Union
• 世界顶尖实验条件: UDPRC, Japan
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- 世界顶尖实验条件: MCEER, USA
• 世界顶尖实验条件: EERF, Canada
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- 世界顶尖实验条件: QuakeCoRE, New Zealand
• 世界顶尖实验条件: NCREE, Chinese Taipei
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ILEE board of directors and scientific committee:

X. Gu (China)  S. Mahin (USA)  X. Lu (China)  T. Yang (Canada)  J. Li (China)  Y. Zhou (China)  K. Elwood (New Zealand)

K. Kasai (Japan)  K. Mosalam (USA)  A. Pavese (Italy)  C. Ventura (Canada)  A. Whittaker (USA)  S. Hwang (Taiwan)  I. Buckle (USA)  B. Stojadinovic (Switzerland)
ILEE

Objectives of ILEE:
• Achieve earthquake resilience society through international effort using state-of-the-art experimental facilities

Strengths:
• Largest international earthquake engineering research network with the most advanced testing facilities;
• Facilitate the exchange of research personal, share facilities and publish cutting-edge research findings.
Shaking table test of cable-stayed bridge model

Bridge Engineering

Earthquake engineering

Building Engineering

Lifeline Engineering

Geotechnical Engineering

Major Energy Facilities

Shaking table test of Shanghai Tower

Numerical calculation model of China Pavilion

Seismic test of super-long immersed tube tunnel of Hong Kong-Zhuhai-Macao Bridge

Seismic isolation model of nuclear power station
ILEE 已有成果

- 已颁布11项 ILEE 研究项目

1) Phase I: Innovative self-centering structural systems and hybrid simulation

Principal Investigator: James Ricles; Lehigh University, USA
Co-PI at Tongji University: Yiyi Chen

Proposed self-centering connections equipped with SMA ring springs
ILEE已有成果

- 已颁布11项ILEE研究项目

2）Phase I: Innovative Solution for Hybrid Wood-Concrete Tall Buildings

Principal Investigator: Carlos E. Ventura; University of British Columbia
Co-PI at Tongji University: Haibei Xiong

Possible arrangements of concrete framing system and wood framing
ILEE 已有成果

- 已颁布 11 项 ILEE 研究项目

3) Phase I: Seismic Probabilistic Risk Assessment of Power Energy Structures

Investigator: Boris Jeremić; University of California, Davis

Co-PI at Tongji University: Zhiguang Zhou
ILEE 已有成果

- 已颁布11项 ILEE 研究项目

4) Phase II: Development of high performance earthquake resilient tall buildings

Principal Investigator: Perry Adebar; University of British Columbia, Canada
Co-PI at Tongji University: Tony Yang

Testing configurations
ILEE已有成果

- 已颁布11项ILEE研究项目

5）Phase II: Ultimate behavior and design of high-performance inverted L-shaped CFT piers in elevated girder bridges

Principal Investigator: Yoshiaki Goto; Nagoya Institute of Technology, Japan
Co-PI at Tongji University: Yan Xu

Details of 6-axis load cell and its calibration
6) Phase II: Real Time Hybrid Simulation Testing of a Curtain Wall System with Online Model Updating

Principal Investigator: Khalid M. Mosalam; Uni. California, Berkeley

Co-PI at Tongji University: Wensheng Lu

Schematic of the application of Hybrid Simulation Model Updating
ILEE已有成果

- 已颁布11项ILEE研究项目

7) Phase II: Shake-table testing of a low-damage concrete wall building

Principal Investigator: Richard Henry; University of Auckland, New Zealand
Co-PI at Tongji University: Ying Zhou