

FRP 複合材料於土木工程應用國際研討會

2012 International Workshop on Applications of FRP Composites in Civil Engineering



主辦單位：國家地震工程研究中心、中華顧問工程司、中華民國地震工程學會

協辦單位：台灣世曦工程顧問公司、潤弘精密工程事業(股)公司、中興工程顧問(股)公司、亞新工程顧問(股)公司、福懋興業股份有限公司、威山工業股份有限公司、中華民國結構工程技師公會全聯會、中華民國結構工程學會

時間：101 年 11 月 5 日(星期一)、11 月 6 日(星期二)

地點：國家地震工程研究中心演講廳 (101 室)

名額：預計 90 人，依報名順序，額滿為止。

報名方式：本研討會每人新台幣 2,000 元，即日起開始報名，請至中心網址 <http://www.ncree.org.tw> 報名，並於 10 月 29 日(星期一)截止報名。

備註：本研討會已申請技師研習積點，及公務人員終身學習時數認證。

◎簡介◎

纖維強化塑膠(Fiber-Reinforced Plastic, FRP)複合材料，具有輕質量、高強度、耐腐蝕、以及材料抗疲勞等優勢，經數十年來之逐漸演進，早已廣泛作為各種運動用具、管道、造船、汽車與電子等產品之製造原料。而此材料在土木、結構工程方面之研究發展，國內諸多學者於理論研究及應用層面上已投入相當努力，也得到不少研究成果，但在實際應用及材料認同層面相對較少著墨，而反觀國外先進國家運用 FRP 材料在土木及結構方面之研究發展，不論在土木領域上使用的認知、相關規範的建立、以及於各項工程上的實際應用，皆有相當豐富的經驗及研究成果，為值得我國工程領域專家學習效仿之對象。為增進國內工程界於此新興材料使用上之認知，並推廣其於土木工程領域之研究與應用發展，國家地震工程研究中心、財團法人中華顧問工程司與中華民國地震工程學會將於 2012 年 11 月 5-6 日，假國家地震工程研究中心 101 會議室共同舉辦「FRP 複合材料於土木工程應用國際研討會 (2012 International Workshop on Applications of FRP Composites in Civil Engineering)」。本研討會之主旨為邀請國內外學者專家進行技術交流並介紹國外於此科技之發展現況，以推廣 FRP 材料於國內工程之應用，提升國內相關工程的技術發展。研討會主題包括：

1. FRP 於土木工程之現況與趨勢。
2. FRP 結構之設計規範與準則。
3. FRP 於土木工程之最新研究。
4. FRP 於土木工程之應用。

本研討會特別邀請瑞士國家材料測試研究院 MEIER 教授、美國奧勒崗州交通局橋梁工程組組長 Ben TANG 博士、加拿大渥太華橋梁研究院 Moe M.S. CHEUNG 教授、南京工業大學 W.Q. LIU 教授、香港理工大學 J.G. TENG 教授、日本京都大學 SUGIURA 教授及韓國國民大學 S.W. LEE 教授與國內台灣大學周中哲教授、磁震科技公司翁慶隆董事長、中華顧問工程司盛力航顧問及國家防災科技中心李中生博士等學者專家們，與產官學研各界共同探討 FRP 複合材料於工程之應用。期望藉由本次研討會活動，增進國內工程界於此新興材料使用上之認知，並推廣其於土木工程領域之研究與應用發展。

Fiber-Reinforced Polymer (FRP) composite, combination of high strength, high stiffness structural fibers with low cost, light weight, environmentally resistant polymers, have better mechanical properties and durability than either of the constituents alone. The light weight, high strength, non-corrosive and non-conductive attribute of FRP was of particular interest to the aviation industry. Nowadays, more and more applications of FRP material in civil engineering are invented and attract the engineers. In U.S., Europe, Canada, and Japan, various guidelines, codes and standards for the application of FRP in civil engineering have been developed, that is also an important objective and direction for us. The 2012 International Workshop on Application of FRP Composites in Civil Engineering, jointly organized by the China Engineering Consultants, Inc. (CECI) and the National Center for Research on Earthquake Engineering (NCREE), held in Taipei, Taiwan on November 5-6, 2012, at the NCREE.

The primary objective of this international workshop is to advocate and promote the understanding and application of FRP techniques in Taiwan's civil engineering projects. Some outstanding professors and senior researchers were invited to present their achievements in application of FRP composites in civil engineering and to share their experience, including Professor Urs MEIER from Swiss Federal Laboratories for Materials Testing and Research, Switzerland, Dr. Ben TANG from Bridge Engineering Section, Oregon DOT, USA, Professor Moe M.S. CHEUNG from Ottawa-Carleton Bridge Research Institute, Canada, Professor W.Q. LIU from Nanjing University of Technology, China, Professor J.G. TENG from Hong Kong Polytechnic University, Hong Kong, Professor SUGIURA from Kyoto University, Japan, and Professor Sung-Woo LEE from Kookmin University, Korea, and Professor C.C. CHOU from National Taiwan University, Adviser L.H. SHENG from China Engineering Consultants Inc. and Dr. C.S. LEE from National Science and Technology Center for Disaster Reduction from Taiwan. It is believed that this event successfully contributes to advocate and promote the understanding and application of FRP techniques in Taiwan's civil engineering projects and local researchers and engineers learn useful information.

議 程 表

2012 年 11 月 5 日(星期一) November 5th, 2012 (Monday)

時間 Time	講題 Subject	主講人 Speaker
08:30~09:00	報到 Registration	
09:00~09:05	開幕致詞 / 張國鎮 主任 Opening Address by Prof. Kuo-Chun Chang, Director of NCREE	
09:05~09:10	開幕致詞 / 廖慶隆 董事長 Opening Address by Dr. Ching-Lung Liao, Chairman of CECI	
09:10~09:20	貴賓致詞 / 陳振川 主任委員 VIP Address by Prof. Jenn-Chuan Chern, Minister of Public Construction Commission	
Theme 1. Overview, Trend and Perspective of FRP in Civil Engineering		
09:20~10:20	Overview, Trend and Perspective of FRP in Civil Engineering	Prof. Urs MEIER
10:20~10:40	茶敘交流 Coffee Break	
10:40~12:10	FRP Composites in Construction: Opportunities, Challenges and Design Guidance	Prof. J.G. TENG 滕錦光 教授
12:10~13:10	午餐 Lunch	
Theme 3. Advanced Research Topics of FRP in Civil Engineering		
13:10~13:50	Advanced Research Topics of FRP in Civil Engineering	Prof. Urs MEIER
13:50~14:20	Experimental Performances of FRP Composites in Civil Engineering Structures	Prof. C.C. CHOU 周中哲 教授
Theme 4. Application of FRP Composite in Civil Engineering (I)		
14:20~15:50	Summary of FHWA Program	Mr. Benjamin TANG
15:50~16:10	茶敘交流 Coffee Break	
16:10~16:40	The application of composite materials on structural repair and reinforcement	Dr. C.L. WENG 翁慶隆 董事長
16:40~17:10	The Application of Composite Shell System (CSS) to Bridge Engineering	Dr. C.S. LEE 李中生 博士
17:10~17:40	綜合討論 Discussion	

議 程 表

2012 年 11 月 6 日(星期二) November 6th, 2012 (Tuesday)

時間 Time	講題 Subject	主講人 Speaker
Theme 2. Design Codes and Guidelines of FRP in Civil Engineering		
09:00~10:30	Progress and Development of Code/Specification in Canada	Prof. Moe CHEUNG 張慕聖 教授
10:30~10:50	茶敘交流 Coffee Break	
10:50~12:20	Progress and Development of Code/Specification in Japan	Prof. Kunitomo SUGIURA
12:20~13:20	午餐 Lunch	
Theme 4. Application of FRP Composite in Civil Engineering (II)		
13:20~13:50	Long-term Experience with Applications of CFRP Composites in Civil Engineering in Switzerland	Prof. Urs MEIER
13:50~15:20	FRP Bridge Deck -- The Korean Experiences	Prof. S.W. LEE 李成兩 教授
15:20~15:40	茶敘交流 Coffee Break	
15:40~16:10	California Experience in FRP Composite Application on Bridges	Mr. L.H. SHENG 盛力航 顧問
16:10~17:40	Application of FRP Material in Civil Engineering (Confirmed later)	Prof. W.Q. LIU 劉偉慶 教授
17:40~18:00	綜合討論 Discussion	
18:00~	閉幕 Closing	