

**Civil Research Group and Civil Engineering Seminars**

**17:00 in Room A401 on Thursday 12<sup>th</sup> January 2012**

**Speaker: Associate Professor Salvatore Russo from Iuav University of Venice, Italy**

**Structural Application of PFRP Materials: State-of-the-art and Challenges in Italy Through New Research**

**Short abstract**

The employment of pultruded FRP (Fiber Reinforced Polymer) as structural material in shapes and systems is now widespread. It is supported by simplified/validated theory, many structural engineering applications and the presence of scientific papers that first appeared about 20 years ago. Despite the progress towards becoming a trusted construction material, there is still a major lack of understanding on:

- a) the use of PFRP structures in seismic zones and the necessity to define the dissipation criteria
- b) the need not 'simply' to mimic steel-design-use, in term of general approach, type of employment, connections and production of cross-section shapes
- c) improving structural design by using testing as the rigorous approach to having preliminary characterization of mechanical properties, before shapes and systems should be employed.

Through this presentation the state-of-the-art in Italy will be shown, starting with the technical recommendations already available, before moving on to significant applications, both in restoration of existing buildings and new structures too. New research approaches will be presented that can be used to derive, from testing and computational simulations, acceptable models for reliably using frame structures of PFRP shapes in seismic zone.

**About the Speaker**

Salvatore Russo was born in Bologna in 1962. He is both a civil engineer and architect and is Associate Professor of Structural Civil Engineering at Iuav University of Venice, Italy, Faculty of Architecture. The three courses he teaches are on Structural design, Experimental tests on Materials and Experimental tests on Structures. He is Director of Laboratory of Strength of Materials at Iuav University of Venice and member of the Academic Senate. He is a member of IIFC (International Institute FRP in Construction) and AICO (Italian Association of Composites Materials). His current research interests are within the four fields of:

- a) structural health monitoring of historic buildings;
- b) non-destructive and micro-destructive testing for assessment of R.C. structures and historic buildings;
- c) new materials (PFRP structural elements/ FRC fibre reinforced concrete) for new components, structural elements/structures and restoration;
- d) all PFRP structures.

He is founder and Head of the Iuav University Research Group Assessment of Historic Buildings (AHB, 2008). He is working on the monitoring, analysis and diagnosis of the Rialto's Bridge, Wall structures-facade of Palazzo Ducale in Venice and churches of S. M. Paganica, Anime Sante and S.P. di Coppito in L'Aquila.

He is an author of over 120 scientific papers, with 22 published in International Journals and Revues. He authored the first Italian book entirely dedicated to PFRP structures.

Best Paper awarded in 4<sup>th</sup> International Conference on FRP Composites in Civil Construction (CICE), 22-24 July 2008, Zurich for a paper co-authored with Dr G.Boscato.