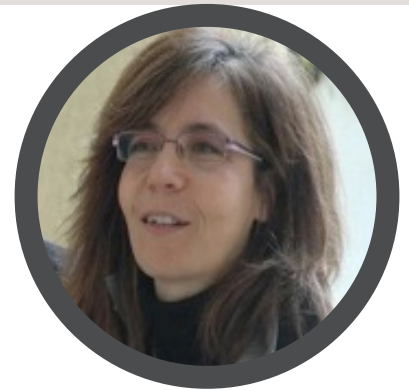


DURABILITY OF CONCRETE STRUCTURE REINFORCED WITH FRP

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Fibre reinforced polymers (FRP) composites are increasingly employed worldwide for the rehabilitation of buildings or infrastructure systems, since they demonstrated to be effective in overcoming some of the well-known drawbacks experienced with traditional interventions and/or usual materials (such as concrete and steel), due to their low weights along with high specific strength and stiffness, resistance against corrosion, ease of installation and reduced manufacture time. These FRP systems substantially differ from those employed from long times in the more demanding aeronautical/aerospace or automotive industries, from the ingredient materials to the manufacture/application processes, from the final properties to the performance. In addition, the knowledge of long term performance and durability of FRP systems employed in such applications, in terms of their degradation/aging causes and mechanisms taking place in common as well as in harsh environmental conditions is still a critical issue for a safe and advantageous implementation of such advanced materials. This uncertainty, on the other hand hampers the enormous potential of composites in rehabilitation of constructions, since the acceptable lifetime of products employed in this field should be in the order of 100 years. The aim of this work is to critically illustrate the durability studies carried out on FRP for civil engineering applications based on current literature, summarizing the main findings and highlighting the issues that are not yet assessed and addressed.



Biography

Mariaenrica Frigione has received her PhD in Polymer Science and Technology from Loughborough University, UK in 1997. She has joined University of Salento in 1997 as Lecturer and as an Associate Professor in 2001. She is Vice-Rector of University of Salento for Technical Scientific Area and Delegate of the Rector for Internationalization since 2013. She is the Leader of Materials and Technologies for Constructions and Cultural Heritage research group, keeping scientific collaborations with Italian and international universities, research centres and companies. She is Co-author of three international patents on organic-inorganic hybrids; the license of two of them was sold to an Italian Company. She is Author/Co-author of around 100 papers published on International indexed Journals and 12 invited book chapters. She is a Member of the Editorial Board of ASCE *Journal of Composite for Constructions*. She is the Secretary of International Congress of Polymers in Concrete Association (ICPIC) since 2018 and Board of Directors Member in the sub-committee International Exchange since 2013.

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