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TENTH 1001VELACUP: TRAINING AND INNOVATION ON THE WATER IN VENICE

September 15-18th saw the tenth edition of the 1001vela cup in Venice, a challenge between nine sailing boats designed and built during degree courses at various Italian universities.

First on the water was Aura of the University of Padova, organiser of this year’s event together with the “Francesco Morosini” military naval school and the Venice Compagnia della Vela, while the Milan Polytechnic again this year won the Paolo Padova trophy for crews made up of a student and a lecturer.

The challenge

Born of an idea of architects Massimo Paperini and Paolo Procesi in 2005 and supported over the years by several Italian universities and prestige sailing clubs such as the Yacht Club Santo Stefano, Circolo della Vela Sicilia, the sailing club of the Italian Navy – Comando Alto Tirreno, Club Nautico Rimini and the Venice Compagnia della Vela, 1001VELAcup over the years has seen the participation of 16 universities and the creation, to date, of more than 30 boats. But the real challenge of this trophy does not take place on the water but in the laboratories of the universities where the boats are designed and built. The rules are designed to stimulate research into materials of natural origin and the optimisation of fluid dynamic factors, and have created the conditions for effective experiments with benefits for the yachting and composite’s industries: avant-garde computer design with tests in tanks and wind tunnels, sensors applied to the sails to monitor stresses on the water, appendages and foils optimised for sailing with hydrodynamic support, wing sails or variable profile sails, hulls in composites of linen, hemp, cork and bio-resins. It was in this field that the Milan Polytechnic won the technological experimentation and innovation prize for its extensive research during the 1001VELAcup project and for the greatest number of boats designed and built, nine of them in 10 years. Fabalal’oeucc, the boat presented by the University in this 10th edition, condensed in just 4.6 m overall and 72 kg more than seven years of application experiments in the biocomposites field. Designed and built by students of the Master in Yacht Design of the Poli.design consortium thanks to the technical contribution of the SMART laboratory of the Lecco pole, the dinghy had hull and structures entirely in linen and balsa sandwich impregnated with polyester resin without styrene. Supporting the design and engineering of the infusion project to make the whole was the Lectra Design Concept software thanks to which

Two stages in the construction of Fabalal’oeucc in the SMART laboratory of the Milan Polytechnic: coating of the mould for the infusion process and laying down of the structures.

Fabalal’oeucc on the water in Venice.

Fabalal’oeucc being launched.
it was possible to manage the nesting and cutting of all the reinforcements in fabric and the core materials with a saving in terms of time and waste of the order of 40% compared with a traditional process.

A further area of experiment was the application of adhesive films for surface finishing instead of traditional paint or gel coats both below the waterline and on the deck. In this case an anti-slip adhesive film easy to apply to surfaces both in composites and in marine ply was successfully tested. As in the past, a large group of company sponsors helped favour the attainment of the objectives of the research; among them C&C Milan which supplied linen fabrics and DIAB the core materials, Poliver the styrene free resin, Lectra which supported the engineering and the cutting of the reinforcement and core materials, Bellotti for the wood used on the deck, Tack System which supplied the self-adhesive films, Viadana the deck equipment and Polimisport which provided logistics support to the crew, shore team and transfer of the boats to the race course.

Competitors on the water in Venice during the 1001VELAcup races.