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SISTEMI EPOSSIDICI PER MATERIALI COMPOSITI
EPOXY SYSTEMS FOR COMPOSITE MATERIALS
SUMMARY APRIL 2016

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awkward and sensitive social issues are rarely tackled by industrial production. Instead they are challenge for research and academic training that works towards social innovation: this is what is happening for the chronic emergency of clandestine immigration in the Mediterranean. The civil war in Syria, which has been going on for five years, is driving away thousands of people towards Turkey, and from there to Europe. Often without documents, many migrants decide to cross – by any means – a stretch of the Aegean, hoping for acceptance as refugees on the coasts of the closest Greek islands. Libya is also a port that leads to Europe: from Tripoli, migrants head for Malta, Lampedusa or Sicily. The European frontier control agency, Frontex, has since the end of 2014 been carrying out operation Triton, to control international waters up to 30 miles from the European coasts, providing aid and assistance to the migrants. The main Mediterranean roots controlled by European ships are the

IT’S A HOT ISSUE BUT TRAINING IS NOT AFRAID TO FACE UP TO IT TO FIND FEASIBLE SOLUTIONS.
Western Mediterranean route, from Morocco to Spain (7164 illegal entries in 2015); the central Mediterranean route, from Libya to Italy, used principally by migrants from Eritrea, Nigeria and Somalia (153,946 illegal entries in 2015); the Puglia-Calabria route, used by a few thousand people a year who head for Italy after entering Greece illegally; and finally the eastern Mediterranean route, from the Turkish coast to the Greek islands, where currently the pressure of migration is greatest, with 885,000 illegal entries in 2015. The voyages are organised by criminal groups: unscrupulous men who manage this modern traffic of human beings, who pack men, women and children into dilapidated, overloaded boats that are often without a guide. The terrible conditions of the voyage not infrequently end in tragedy: Amnesty International calculates that in the Mediterranean, between 1988 and 2014, 21,000 people drowned, and unfortunately the phenomenon is on the increase; despite the European commitment, 3771 deaths were recorded during the voyages of hope in the Mediterranean; the most dangerous route is the central Mediterranean, which accounted for 77% of victims.

The project

Hours it possible to tackle this problem? Can the project help tackle in a concrete way the problem that afflicts the Mediterranean? Professors Davide Bruno and Marinella Ferrara, as part of the industrial design laboratory 2 of the degree course in Product Design at the Milan Polytechnic, proposed the issue to their students, asking them to develop systems for sea rescue and emergency assistance on land. In groups of three or four, the students were enthusiastic and developed widely differing proposals. Luca Macri, Gherardo Martin, Davide Modanese and Gayong Lee suggested a modular inflatable that could be launched round the vessel filled with people in difficulty, to offer them an emergency raft to jump onto. This object, called Puffer Island, is housed in a rigid and compact case and inflates when launched. The students imagined a fully automatic emergency system, where the vessel is in danger are identified and the emergency raft transported by drones, under a rescue procedure handled from the coast. The Floatus project, developed by Gabriele Mauri, Luca Mazzetti and Giulia Nespoli, is an emergency inflatable that can be launched from a helicopter, in two versions: individual and collective, for a maximum of six people. In this case the device has a rigid part and an inflatable part; in addition to allowing people to get out of the water, the device is designed to reduce fatigue, offer stability in the water, a small supply of drinking water, a heater to avoid hypothermia and GPS to fix its position. Alma Malara, Sara Picozzi and Fabrizio Lingua propose a modular system to meet the needs of migrants (water and light) when they reach the coast, offering a system that can be managed autonomously or also with the help of coastal communities. Inspired by the mitigating action of the sea, Tothem can accumulate and provide resources. It can supply light from photovoltaic energy and drinking water by filtering and condensing the humidity in the air. The language of the object, which is essential and functional, is suited to the job it has to do. The issue of design for emergency is undoubtedly very topical and a useful test bench for the students, who derive significant training and educational value by tackling primary needs. This training initiative by the Milan Polytechnic shakes up consciences to work on problems that seem untouchable.