

Healir: An Innovative Smart and Intelligent Air Filter

Grondona, Matteo (School: I.I.S A.Maserati)

Rattini, Martina (School: I.I.S A.Maserati)

Burns, Edward (School: I.I.S A.Maserati)

HEALIR aims to be a smart and Eco-Friendly air filter for domestic use to allow a sensitive reduction in atmospheric pollution to the benefit of both the environment and health of a possible buyer. To accomplish this goal HEALIR has been designed with 3 types of filtering that coincided the maximum efficiency while always remaining Eco-sustainable. The aforementioned filters are: Filtering of particulate matter through Activated Carbon, Filtration of CO₂ (and conversion of it in O₂) NO_x and SO_x through Micro algae, further filtration of PM₁₀ and hydrocarbons through Ionized Cotton. HEALIR is intended as a Smart product (home automation) for the electronic system it owns, namely: an LCD Touch interface-Screen that allows the management of the filtering system quickly and intuitive, A large number of sensors (Humidity, Temperature, Pollutants, Integrity Analysis etc.) for the detection of environmental parameters and one maintenance of the filter system as simple as possible equipped with a Machine Learning algorithm (the technique for which a program can process the data and find the best configuration) to ensure the maximum efficiency for any environment. HEALIR may also be manageable from outside your home thanks to an APP developed ad hoc.