Curriculum

Giuseppe Maria Catalano was born in Palermo on 29th January 1959. In 1984 he took the degree in engineering with full marks and honour at Palermo University.
Since then he has been carrying on an intense activity of didactics and research in the Representation Department of the same University.
He was appointed Cultore of Design an Cultore of Descriptive Geometry Applications at Palermo University.
From 1985 to now he published several important studies about the Sciences of Space Representation.
He published volumes, articles in the most prestigious international scientific magazines as well as contributions in national and international meetings, treating of Design, Descriptive Geometry Applications and also Survey, Photogrammetry, Perception and Epistemology of Representation, Authomatic Design, History of Space Representation, Visual Communication Technique, Ancient Architecture and Earth Science. In the same time he created instruments for survey and representation.
To him we owe *the theory of Cromosintagma*, that explains functioning of the human visual system in choosing the color combinations, *the Science of Representation fundamental theorem ,*
which is the basis of all the space representation systems and
the theory of absolute no-measurability of space .
He is author of very important discoveries.
In 1992, with the aim to promote a larger and better way of considering the Representation Science, an important thesis, argued yet by great scientists, about the land masses forming is geometrically proved: about 200 millions years ago Earth, much more littler than today, would have been completely covered by the continental shelf. Then, after its split, Earth would have begun to increase until the present state and it would be still increasing.
In 1998 Catalano shows that 240 millions years ago a huge asteroid (km 350 in average diameter) broke the Earth's crust and started the expansion of the terrestrial globe.
Then in 1999, applying the photogrammetric restitution to the Shroud of Turin, he realizes the shocking discovery that finally authenticate the precious relic.
On the Shroud there are dozens of often partially superimposed images of the same objects. The restitution also shows a sequence of images of moving hands.
In 2000 he founded the International Institute for Advanced Studies of Space Representation Sciences.
In 2008 he lays the foundations of the *theory of the dimensions of space*, that is based on the theory of absolute no-measurability, proving the existence of the fourth geometric dimension, in addition to the three dimensions of space-time
Always in 2008 the scientist also demonstrates the General Theorem of Poliedron Prisms on the bases of the topological homeomorphism, reaching, unlike Cartesio's (1622) and Euler's (1752) demonstrations, later generalized by Huilier, extreme slenderness and elegance. The importance of the result consists in the demonstration that homeomorphism can solve or

simplify many other geometrical problems.
In 2011 the scientist demonstrates Kepler conjecture on the packing of spheres, that was considered till now one of the great mathematical non resolved problems.
The dimostration has deep implications, like, for example, the organization of the data in the computers.
The showed theorem not only prove the validity of Kepler conjecture, but too simplicity, brevity and elegance of projective geometrical solutions, compared with gigantic, complex course of computation.
In 2016 ends the development of the dimensions of space theory, which completes the fusion of geometry and physics begun by A. Einstein.
The theory shows that matter and energy are part of the space-time, which has theoretically and experimentally at least ten geometric dimensions, to each of which corresponds a force of nature.

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