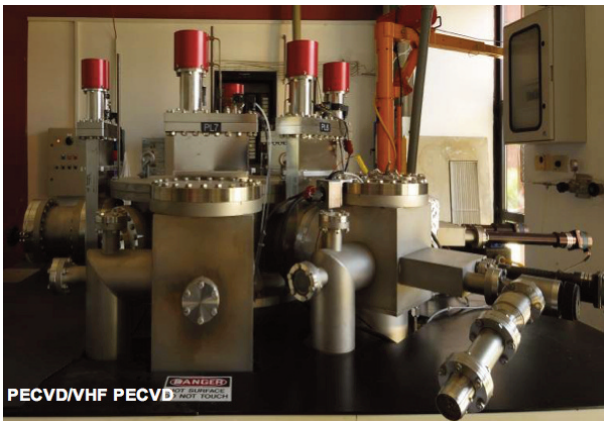
NACE CODE C26

DEVELOPMENT OF MATERIALS AND ARCHITECTURES FOR PHOTOVOLTAIC AND GAS SENSOR INNOVATIVE DEVICES

Innovations and Benefits - Development, realization, and characterization of materials and high efficiency photovoltaic devices based on silicon and perovskite absorbers that are compatible with industrial processes and that allow a cost reduction of the produced energy.
Development, realization, and characterization of graphene-based gas sensors with low energy consumption that are compatible with wireless electronics for application in different fields (environmental, aeronautic, medical, etc.).

Uses - Technology development within the appropriate industry area of interest. Development of materials and processes that could be useful also in fields different from those indicated.

Past and present activities - Development of innovative solar cells in the framework of the Operating Agreement between ENEA and Italian Ministry of Economic Development for Research on the Electric System. Partnership with 3SUN (ENEL GP) and other European Research Institutions to promote the realization of an industrial pilot line for innovative photovoltaic modules in the framework of EU H2020project “AMPERE” and previously in EU project “Fast Track”.
Development of graphene-based gas sensors for NO_2, H_2, NH_3 detection.



PECVD deposition system for silicon-based thin film growth

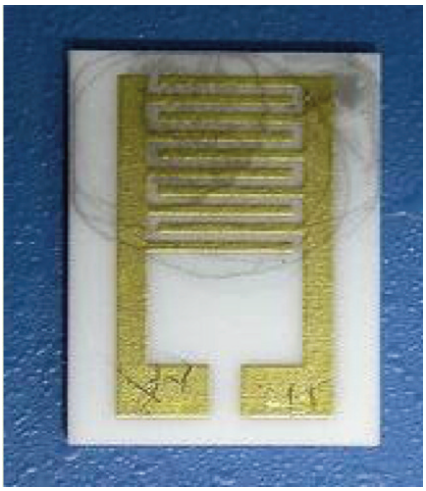
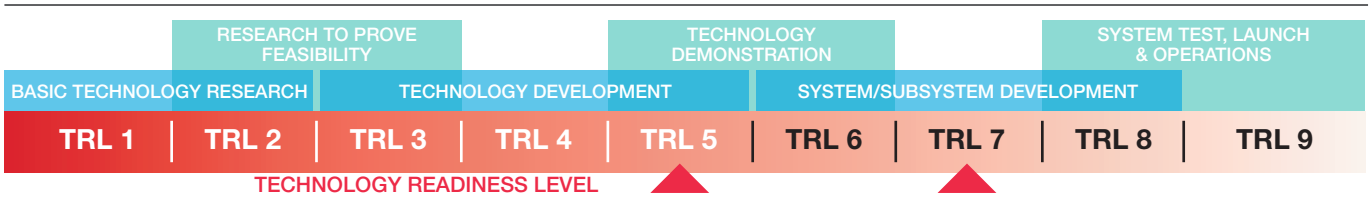


Image of a graphene-based gas sensor



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