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# Palermo introduces Senso: a sensor measuring oxygenated water in cell culture soils

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SE.N.SO is a research project conducted by Dipietro Group along with the University of Palermo, Certyceq, CNR, Fondazione Rimed, and RuleTech. The project aims to develop a biosensor to measure oxidative stress in vitro. The sensor, a nanostructured electrochemical device, can quantify hydrogen peroxide in cell culture media. This innovation has potential industrial applications and market opportunities. The research is funded by the Po Fesr 2014/2020 measure 1.1.5, which supports technological advancement in businesses through partnerships. The sensor offers cost and time-saving benefits, as it can be used directly in cell culture dishes. It provides an innovative and efficient approach to monitoring oxidative stress in real-time. The sensor's development was inspired by the study of hydrogen peroxide released by cells under oxidative stress. These reactive oxygen species can damage cells, making hydrogen peroxide an ideal marker for stress detection. Currently, laboratory techniques like spectroscopy and flow cytometry are used for monitoring, but they are expensive and require sample collection. In contrast, the developed sensor is cost-effective, easy to use, and can be used continuously in cell culture dishes. This allows for real-time monitoring of oxidative stress, even when cells are exposed to different stimuli.