Paper-based electrochemical (bio)sensors as sustainable and smart devices for the defence sector

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As reported in my recent perspective entitled "Paper as a Sustainable Material for Smart Electrochemical (Bio) sensors with Unprecedented Features: A Perspective" published in Analytical Chemistry [1] "*The use of paper in electrochemical devices not only provides additional features to the electrochemical devices such as the environmentally friendless, ease multiplexed analysis, and three tridimensional structures by folding and unfolding operations but has broken down barriers for delivering measurement without (i) addition of reagents, (ii) sample treatment for liquid, aerosol, and solid samples, and (iii) any additional pump for microfluidics*". In this presentation, I will report on the research activity carried out in my group on the development of paper-based electrochemical (bio)sensors to deliver a smart lab-on-a-chip-on-paper for the detection of chemical and/or biological warfare agents in solution, in the aerosol phase, and on contaminated surfaces.

References

[1] F. Arduini, *Anal. Chem.*, **2025**, 19, 10126.

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