Graphene-based biosensors for COVID-19 diagnostics: latest applications

Enric Calucho
Ruslan Álvarez-Diduk, Arben Merkoçi
Institut Català de Nanociència i Nanotecnologia (ICN2), Bellaterra (Barcelona), Spain
arben.merkoci@icn2.cat

In December 2019, an outbreak of severe acute respiratory syndrome caused by a novel coronavirus (SARS-CoV-2) was originated in Wuhan, Hubei province, China, escalating into a global pandemic in just three months. The disease, officially named COVID-19, has saturated healthcare systems worldwide, thus demonstrating the urgent need to deploy rapid and reliable diagnostic tools. Along with contention measures such as social distancing and good hygienic practices, the rapid implementation of diagnostic strategies during the early stages of the pandemic can have a major impact on limiting the spread of the virus. Graphene and its derivatives have been applied in the development of biosensors for the detection of all kinds of analytes, e.g. bacteria, viruses, proteins, nucleic acids and heavy metals [1]. In the current context of emergency, graphene has an excellent opportunity to demonstrate its capabilities for biosensing applications. This poster shows the latest examples of graphene applied for the diagnosis of COVID-19, taking advantage of its high electronic conductivity.

References

[1] Adv. Mater. 2017, 29, 1604905.
[2] Military Med. Res., 2020, 7-11.