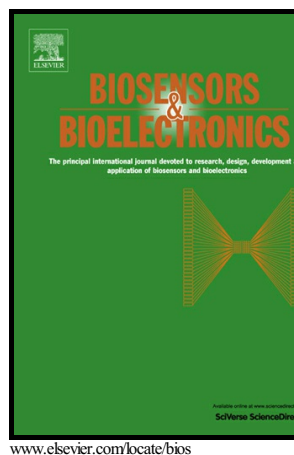


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## Progress in chemical luminescence-based biosensors: a critical review

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### Keywords

Chemical luminescence biosensor; Chemiluminescence; Bioluminescence; Electrogenerated chemiluminescence; Thermochemiluminescence; Affinity biosensor

### ABSTRACT

Biosensors are a very active research field. They have the potential to lead to low-cost, rapid, sensitive, reproducible, and miniaturized bioanalytical devices, which exploit the high binding avidity and selectivity of biospecific binding molecules together with highly sensitive detection principles. Of the optical biosensors, those based on chemical luminescence detection (including chemiluminescence, bioluminescence, electrogenerated chemiluminescence, and thermochemiluminescence) are particularly attractive, due to their high-to-signal ratio and the simplicity of the required measurement equipment.

Several biosensors based on chemical luminescence have been described for quantitative, and in some cases multiplex, analysis of organic molecules (such as hormones, drugs, pollutants), proteins, and nucleic acids. These exploit a variety of miniaturized analytical formats, such as

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