

Field-effect detection using phospholipid membranes

REVIEW ARTICLE

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Abstract The application of field-effect devices to biosensors has become an area of intense research interest. An attractive feature of field-effect sensing is that the binding or reaction of biomolecules can be directly detected from a change in electrical signals. The integration of such field-effect devices into cell membrane mimics may lead to the development of biosensors useful in clinical and biotechnological applications. This review summarizes recent studies on the fabrication and characterization of field-effect devices incorporating model membranes. The incorporation of black lipid membranes and supported lipid monolayers and bilayers into semiconductor devices is described.

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