

## **Biomolecular Immobilization Onto Microwave Gaas Field-effect Transistor Gate Metal - Biomed 2009.**

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### **Abstract:**

Integration of high-frequency solid-state microelectronic devices into biomedical applications is becoming increasingly attractive. The high sensitivity of microwave devices to local changes in electromagnetic fields makes them a logical choice for an impedimetric biosensor, for example; furthermore, incorporation of a biomolecule as a biorecognition element results in high diagnostic specificity. Integration of organic biomolecules into a solid-state sensing platform can be accomplished by various immobilization schemes. The present work describes a general approach by which organic molecules can be immobilized onto a thin-film gate metallization of a Schottky metal-semiconductor field-effect transistor (MESFET), permitting attachment of proteins or nucleic acids.