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利用課題名（日本語） :バイオセンシング用化学修飾表面の評価
Program Title (English) :Evaluation of surface modification for biosensor application
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1. 概要（Summary）

The objective of this project is to fabricate biomolecule detection platform on electrode surface either SiO_2 on silicon substrate and Gold (Au) surface on glass for biosensor devices. SiO_2 surface and gold electrode were modified with coupling functional group that could immobilized with biomolecules.

2. 実験（Experimental）

【Equipments】

DC / RF sputtering system(Gold).

【Process】

The gold electrode was fabricated on glass by using the DC/RF gold deposition machine. Then gold surface modified with thiol derivative.

In the meantime, SiO_2 surface also modified with silane coupling molecule.

Both electrode have been used to fabricate the self-assembly monolayer composing of silane and thiol coupling agents. AFM has been used to investigate the surface structure, roughness and thickness of self-assembly monolayer.

3. 結果と考察(Results and Discussion)

The DC/RF gold deposition machine has been used to fabricate the titanium nitrate (50nm) and Aurum thin film (100nm) on glass substrates. We studied the SAM layer formation on gold surface and SiO2 surface. Fig. 1 shows an AFM image of the silane-modified SiO_2 surface (left) and gold terminated with thiol (right). Therefore, both electrode could be used as biomolecule interface.

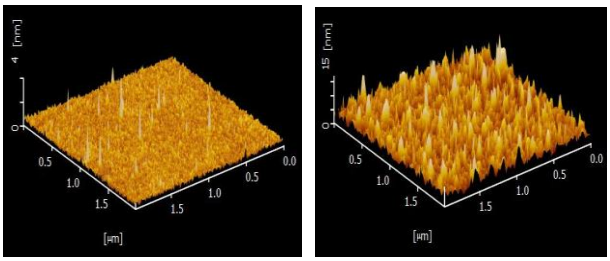

Fig.1: AFM measurement for silane and thiol modified on SiO_2 and gold electrode.

4. その他・特記事項（Others）

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5. 論文・学会発表（Publication/Presentation）

None

6. 関連特許（Patent）

None