DNA AND RNA BASES ADSORBED ON GOLD NANOPARTICLES INVESTIGATED BY UV AND RAMAN SPECTROSCOPY

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Adsorption behaviors of DNA and RNA bases on gold nanoparticle surfaces have been investigated by means of UV absorption and Raman spectroscopy. Gold nanoparticles were prepared by chemical reduction or pulse laser ablation methods. Adenine and cytosine appeared to bind more effectively than guanine and thymine, respectively. These results suggest that the amine groups attached at $C_6$ of adenine and $C_4$ of cytosine should play a significant role upon adsorption on gold. Uracil was found to bind more weakly than cytosine or thymine. More detailed study on the adsorption structures are currently in progress using Raman spectroscopy and will be discussed at the meeting.