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Comparative study of different DNA chip preparation methods by means of Surface Plasmon Resonance YANNICK SARTENAER, Laboratoire Lasers et Spectroscopies - FUNDP - University of Namur, 61 rue de Bruxelles, B-5000 Namur, Belgium, RYUJI HARA, HARUMA KAWAGUCHI, Laboratory of Polymer Chemistry - Keio University, 3-14-1 Hiyoshi, Kohoku-ku, Yokohama 223-8522, Japan, PAUL A. THIRY, Laboratoire Lasers et Spectroscopies FUNDP - University of Namur, 61 rue de Bruxelles, B-5000 Namur, Belgium — Recently, we demonstrated that SFG vibrational spectroscopy allows the detection of the specific recognition between the two molecules of a model ligand-protein biosensor. Moreover, we studied by this technique, the formation of thiolated single stranded DNA (ssDNA) monolayers immobilized on metallic substrates which are the basis for various biotechnology applications. Before going further into monitoring the hybridisation process in DNA based sensors, it is important to identify a preparation method providing good quality DNA chips with respect to the recognition process. Therefore, we performed investigations by Surface Plasmon Resonance (SPR). Practically, we used four different methods of chip preparation on gold surfaces and we measured the amount of deposited molecules when the sensor is exposed to a target DNA solution. By this way, we monitored for each case the sensitivity and the selectivity of the sensor by comparing the hybridisation of complementary and non complementary target ssDNA, respectively.

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