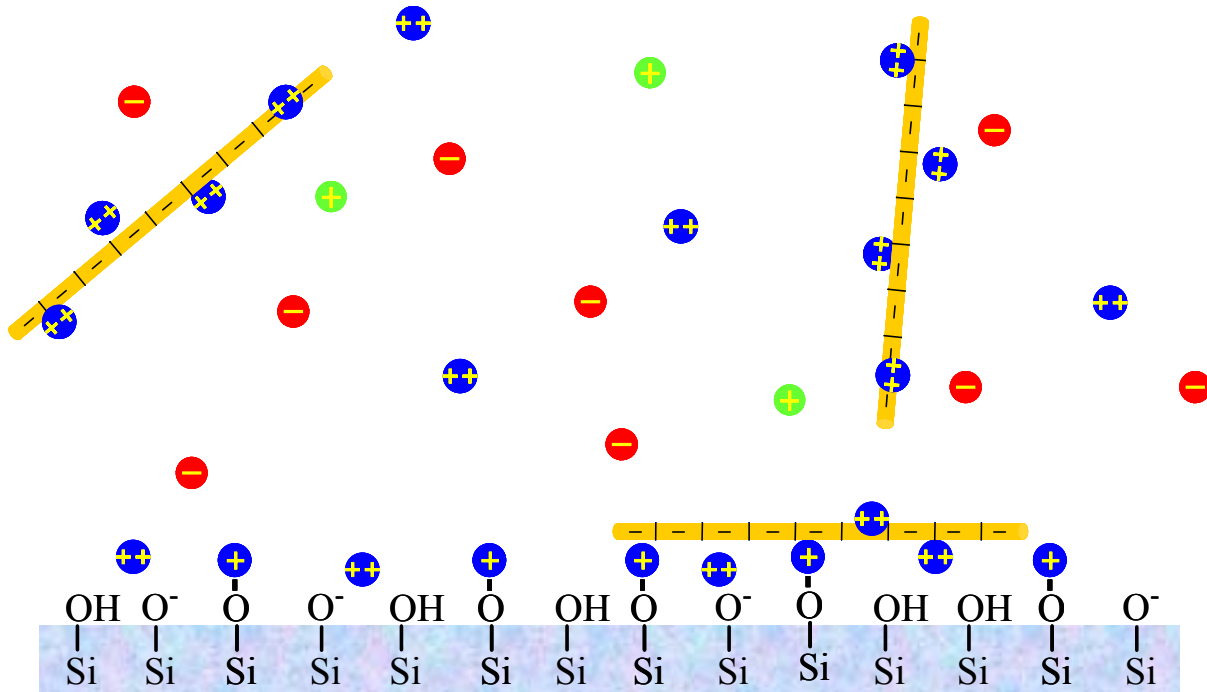


4.1.6 POLYNUCLEOTIDE ADSORPTION AT A NEGATIVELY CHARGED SURFACE

J. A. Libera, H. Cheng, M. Olvera de la Cruz, M. J. Bedzyk, "Direct Observation of Cations and Polynucleotides Explains Polyion Adsorption to Like-Charged Surfaces," submitted to *Nature*.

This research studied negatively charged polynucleotide adsorption on a like-charged surface in divalent salt solution using a two-state model. It was determined that the electrostatic field of polynucleotides approaching a charged surface breaks the surface reaction balance and promotes reactions, which results in adsorption. The theoretical results quantitatively match long-period x-ray standing wave experiments. This new adsorption mechanism is useful to explain many biological processes and is helpful in making self-assembled nanostructures.



Negatively charged polynucleotide adsorption onto a like charged surface