

Publication

Analyzing refractive index changes and differential bending in microcantilever arrays

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A new microcantilever array design is investigated comprising eight flexible microcantilevers introducing two solid bars, enabling to subtract contributions from differences in refractive index in an optical laser read out system. Changes in the refractive index do not contribute undesirably to bending signals at picomolar to micromolar DNA or protein concentrations. However, measurements of samples with high salt concentrations or serum are affected, requiring corrections for refractive index artifacts. Moreover, to obtain a deeper understanding Of molecular stress formation, the differential curvature of cantilevers is analyzed by positioning the laser spots along the surface of the levers during pH experiments.

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