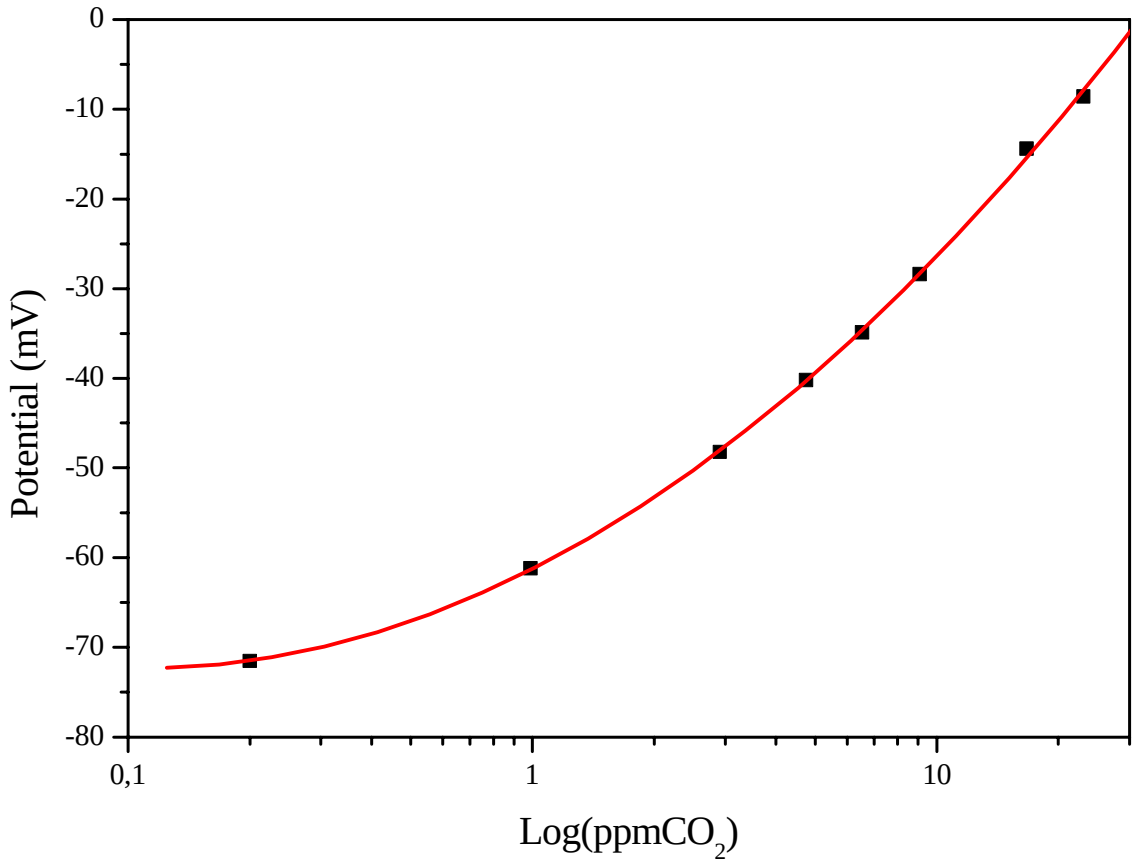
UNIVERSITY OF CRETE
DEPARTMENT OF CHEMISTRY

Laboratory of Analytical Chemistry
Electrochemical Sensors and Biosensors

Carbon Dioxide Electrode For Low Level Measurements

Using a normal Carbon Dioxide electrode, one cannot usually measure bellow 10 ppm. This is mainly due to the chemistry of the buffer used. We have optimized the buffer solution, as well as the internal solution of the electrode so that measurements can be made in the range between 0.2 and 20 ppm.

Carbon Dioxide Calibration Curve



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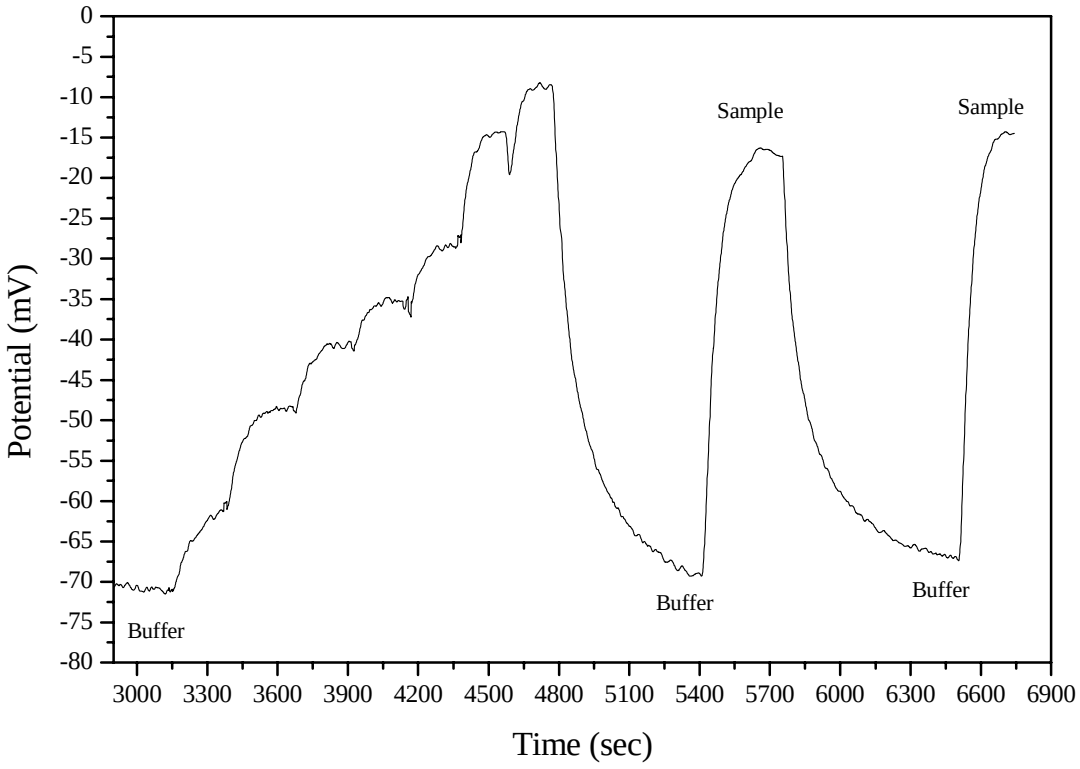
At the low levels, bellow 10 ppm, the response of the sensor is a bit slower. This must be taken into account when the sensor is used with a mV meter, since the signal drift cannot be easily observed. Chart recording bellow shows the response time of the sensor for Carbon Dioxide levels between 0.1 and 15 ppm



!!!!ATTENTION!!!!

Due to the fact that the electrodes used are based on pH glass sensors, a good quality mV or ion meter is mandatory for precise work. A low input impedance meter will show continuous drift, and poor results, while it will eventually destroy the sensor.