MINIATURE, INEXPENSIVE, AMPEROMETRIC OXYGEN SENSOR

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Significant progress has been on this project since the last report. MRA Laboratories, Inc. has nearly completed manufacture of all the sensor bodies, both bismuth-based and zirconia-based, with and without incorporated platinum track heaters. Shortly, the sensors will undergo an electrode stabilization procedure at Rosemount, which should prevent long-term degradation of the electrode/electrolyte interface. This procedure is proprietary to Rosemount and has been delayed because of changes in personnel at Rosemount. It is anticipated that Rosemount will complete their work in the stabilization process in late October or November.

In the meantime, measurements have been started on unstabilized sensors at various temperatures, sensor voltages and partial oxygen pressures. Two specialized instruments have been designed and delivered for use with these measurements. One instrument will maintain a constant voltage across the sensor, even under varying conditions of temperature and oxygen partial pressure. The other instrument will be attached to the internal heaters of the sensors and hold the sensor at a constant temperature.

Because of the delays described above at Rosemount in stabilizing the electrodes of the sensors, we have asked for, and been granted, a no-cost extension to this program.

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