

YOGI VEMANA UNIVERSITY

Vemanapuram, Kadapa – 516003, A.P., INDIA.

Dr. K.S.V. Krishna Rao
Principal Investigator
ISRO Project
Department of Chemistry



Tel: +91-8562-225410
Fax: +91-8562-225419
Email: drksvkrishna@yahoo.com

No: YVU/KDP/CHEM-KSVKR-ISRO-/2014

13.08.2014

To

The firms

Sir,

Sub: Yogi Vemana University College- ISRO Project-Department of Chemistry-Purchase of **Equipment (Electrochemical Impedance Spectrometer with Fuel Cell Unit)**- Quotation-Requested-Reg.

You are requested to send your lowest quotation in duplicate towards the supply of **Equipment (Electrochemical Impedance Spectrometer with Fuel Cell Unit)**, (specifications mentioned below) along with your terms and conditions, in the name of Registrar, Yogi Vemana University, and Kadapa. So to reach **The Registrar, Yogi Vemana University, Vemanapuram, Kadapa-516003** on or before: **06.09.2014**.

- **Electrochemical Impedance Spectrometer with Fuel Cell Unit**

Required Specifications

Current range: $\pm 1\mu\text{A}$ to $\pm 500\text{mA}$ or more

Compliance voltage: $\pm 12\text{V}$ or better

Applied Potential range: $\pm 10\text{V}$ or more

Voltage Resolution: $1\mu\text{V}$ or better

Current Resolution: 1000fA or better

Potentiostat Rise time: $< 500\text{ns}$ or better

Frequency range: $10\mu\text{Hz}$ to 7MHz or more

AC Amplitude: 0.5mv to 1V Peak to Peak or better

Acquisition speed: $1000,000$ samples/second or better

Bandwidth of electrometer: 8MHz or better

Electrode configurations: 2, 3, 4 & 5 electrode configurations.

Interface: USB

Floating facility is required.

A comprehensive Software package with the following software & techniques should be provided along with the system.

Fuel cell/Super capacitor testing software including Impedance measurement facility, constant load discharge, constant current constant power.

Impedance spectroscopy software

Pulse software including DPV, NPV, RNPV, SWV etc

Corrosion software including LPR, Tafel etc.

Photovoltaic /Battery testing software

Voltammetry software including CV, LSV etc..

Equivalent fitting circuit software

Analysis tools for corrosion, CV, Battery, Impedance with 2D, 3D view is required.

Fuel cell fixtures.

5cm² Fuel cell fixture with some 1mm, 2mm and 3.2 mm diameter holes have been drilled in the graphite plates for voltage and temperature probes. A 6.8mm diameter hole has been drilled in each end plate to receive a heating cartridge. These test cells are all equipped with “swagelock” type fittings matching 6mm diameter gas pipes.

Peristaltic Pump should be provided with the cell fixture.

A suitable Air conditioner probably 1.5 ton for the Instrument and test sample should be provided to keep the working sample in controlled temperature.

Yours faithfully

A handwritten signature in green ink, consisting of a stylized initial 'K' followed by a long horizontal flourish.

(Dr. K.S.V. Krishna Rao)