

TECHNICAL BID PROFORMAItem Name: **ELECTROCHEMICAL IMPEDANCE FOR BATTERY CYCLER****1.0 Bidder Eligibility Criteria:**

I	Bidder Eligibility Criteria-I (Public Procurement – Preference to Make in India)	Class I / Class II	Local Content value	Reference, Page No.
I	Only 'Class-I local suppliers' and 'Class-II local suppliers', as defined under DIPP, MoCI Order No. P-45021/2/2017-PP (BE II) dated 16 th September 2020 and other subsequent orders issued therein.			

2.0 Technical Compliance:

S.No	Specification	Complied/Not Complied	Ref No
1.	Electrochemical Impedance For Battery Cyclers IIT Madras proposes to upgrade existing eight channel high current battery cyclers for impedance measurement. The upgradation involves the addition of frequency response analyser (FRA) to measurement electrochemical impedance properties for all the existing eight channels. Complete details of existing cyclers and requirements on FRA is provided in the specifications below. The following technical specifications should be complied with completely to qualify the technical bid. A detailed technical compliance statement should be provided and manufacturer's (OEM) product brochure should support it. Information provided in vendor/supplier/redistributor/reseller's website cannot be considered as a supporting document		
2.	Specifications of Existing Battery Cyclers		
3.	Make: Arbin Instruments Inc. USA		
4.	Model: LBT21084UC-0~5V-10/0.5/0.02/ 0.001A-8CH		
5.	Number of Channels: 8		
6.	Maximum current: 10 A		
7.	Maximum voltage: 5V		
8.	Minimum voltage: 0V		
9.	Power input: 220 V AC, Single Phase		
10.	Software: Software 'MITS Pro' available to control the cycler operation.		
11.	Technical requirements of Electrochemical Impedance Upgradation		

12.	The vendor/OEM should supply Frequency Response Analyzer that can be integrated with the existing battery cyclers		
13.	All necessary connectivity modules/accessories between the FRA module and existing battery cyclers should be carried out at IIT Madras. The product cannot be shipped to vendor/OEM location.		
14.	Should provide software that can be integrated with 'MITS Pro'. The vendor's or OEM's software should work in the backend and integrate with the existing software. All the capabilities of MITS Pro should be retained.		
15.	The vendor should supply FRA that is integrated with electrochemical workstation. The setup should be supplied as a single unit and it has to be integrated with existing battery cyclers.		
16.	The supplied unit should be capable of operating independently as electrochemical workstation. Should have a compliance voltage of at least $\pm 17V$		
17.	Current measurement resolution should be at least in sub-nA		
18.	Voltage measurement resolution should be at least $10 \mu V$		
19.	Should have an independent software to carry out standard electrochemical studies and impedance measurements, if not used with battery cyclers		
20.	The FRA should be capable of operating at least between 1 MHz and 10 mHz.		
21.	The FRA should work in sequence if multiple channels require impedance measurements. All channels in the battery cyclers should be able to access the FRA without manual intervention, like cable changing.		
22.	Minimum one year onsite warranty from the date of installation of the products.		
23.	Computing system necessary for data collection should be provided.		
24.	Any additional components required to meet the technical specifications above should be quoted.		
25.	The vendor should have supplied at least two similar instruments in India in the past two years. List of their customers and their contact details should be provided. IIT-Madras shall inquire the bidders' customers about the quality of product/service. If the testimonial from their customers is not satisfactory, IIT-Madras reserves the right to reject the bid based on technical grounds.		
26.	Installation and training onsite is required.		