

Dated: 05.02.2021

**CORRIGENDUM -1**

Reference: **E-Procurement of Contact Angle Measurement System**

Tender number: **RG IPT/JAIS/CEES/E-OPN/LAB/2020-21/03**

Please refer to the following amendments in the tender.

The following modifications are mentioned below:

1. Revised Technical Specification attached (updated changes highlighted mark bold in specification sheet).
2. Last date of submission e-tender is - 18<sup>th</sup> February 2021 (Thursday) 3PM.
3. The date of opening of Techno Commercial bid - 18<sup>th</sup> February 2021 (Thursday) at 4PM.

The bidders are requested to upload the tender following the revised technical specifications following the corrigendum-1.

The other term and conditions are unchanged.

Note: Please see our website [www.rgipt.ac.in](http://www.rgipt.ac.in) for more information.

Approved By:



**Dr. Amit Ranjan**  
**Chairman Purchase Committee**  
**CEES Department.**





## RAJIV GANDHI INSTITUTE OF PETROLEUM TECHNOLOGY

[An Institute of National Importance established under an Act of Parliament]

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### E-Procurement of CONTACT ANGLE MEASUREMENT SYSTEM

Tender No: - RGIPT/JAIS/CEES/E-OPN/LAB/2020-21/03

Date: 05.02.2021

#### Corrigendum-1

The pre-bid meet was held on 04.02.2021 at 4 pm. Based upon the suggestions received from prospective bidders, following revisions in some of the technical specifications are given below (revised specifications are shown in highlighted text):

#### Revised Technical specification of Contact Angle Measurement System

Drop Shape Analysis for software-controlled contact angle measurements, surface free energy and surface/interfacial tension by pendent drop method and accessories

S. No.	Technical Specifications	
1	Frame module	Standard frame for fixing the light source, sample stage, dosing system, optics and camera. The frame must be rugged enough to place heavy samples up to 5.00kg weight. It must have four adjustable feet for level adjustment. The system should be suitable for measurement of advancing/receding angle and angle of slide, <b>with the option of tilting the stage.</b> The system should be able to make the video of drop and able to provide the contact angle of both sides of the drop
2	Light source	High power LED lamp diameter <b>45mm</b> or bigger with integrated light-blind or any other system, <b>or any other technology</b> , useful for measuring contact angle less than 15 degree
3	Optics system	Optical system with zoom (6X) lens or better
4	Camera system	Consisting of: High resolution and high speed USB 3.0 camera or better. Sensor: CMOS or better IR-CUT filter, <b>if required</b> for elimination of optical disturbances or better <b>Frame-rate: 150 fps to 3000 fps, 2 Mega-pixels or better. (Pixels can be higher but not lower)</b>

5	Sample stage	<p>Axes and sample stages: The sample stage size should be 70mmx70mm (LxW) or better with manual precision drive for movement of sample in X-Y-Z directions. The sample stage should be able to take the sample size of <math>\infty</math>x300x50mm (DxWxH), the stage should be capable to take the samples of 5 kgs or more.</p>
6	Dosing system	<p>01 nos. Software-Controlled direct dosing system &amp; one manual dosing system with caliper for glass and disposable syringes. <b>One of the dosing must be software controlled.</b></p>
7	Accessories	<p>Sample holder for foils &amp; films with provision to fix the sample of minimum 6x6cm. Powder sample holder. Glass cuvette for IFT measurements. <b>Sample stage with holder clips for powder or pellets etc..</b> Sample holder for flexible films and paper. J shaped needle 01no.</p>
8	Computer	<p>The system should have compatible computer system with i7 processor, 8 GB RAM, 1 TB HDD, 24 inch display monitor, mouse, keyboard, Laserjet printer</p>
9	General	<p>Contact angle measurement range: 0-180 degree. Measurement resolution: 0.1 degree.</p>
10	Software	<p>The complete software must be compatible with Windows 10 and an integrated pack to control the dosing of liquids, image analysis and evaluation of results. Software to determine static and dynamic contact angles using sessile drop and captive bubble method, store and report measured contact angle values. The software should be able to record the video images and should be able to trigger the camera for video recording. These video image are then analyzed frame by frame by the software automatically. Software to determine surface free energy of solids from contact angle data. The surface free energy splits into its polar and dispersive components. Integral and extendable database with substance data of liquids which can be linked directly to the measuring data. Software to measure the surface and interfacial tension of liquid-air/liquid-liquid interface by pendent drop method. <b>All future software updates must be provided without any additional cost</b></p>
11	Spares	<p>Glass syringe 500 <math>\mu</math>l-01 no. Needle: Stainless needle with PTFE inlet, diameter 0.7mm, length 28mm-25 nos., disposable tips-25</p>
12	Warranty	<p>2 years Comprehensive warranty.</p>

  
Dr. Amit Ranjan

Chairman, Purchase Committee

Head, Department of Chemical Engineering & Engineering Sciences

