

JAWAHARLAL NEHRU TROPICAL BOTANIC GARDEN & RESEARCH INSTITUTE,
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e-Tender Notice

Tender ref no: JNTBGRI/248/VGY/A325/PCC(P)/26 25-09-2026

Tender id: 2026_KCSTE_873035_1

e-tenders are invited from competent vendors for the supply of Dynamic Light Scattering
Analyser with the following specifications at JNTBGRI, Palode, Thiruvananthapuram

Sl. No.	Item with complete Description	No.
1.	DYNAMIC LIGHT SCATTERING (DLS) ANALYSER Specifications for Nano Size and Zeta Potential Measurement system: The Dynamic Light Scattering based system should be capable of measuring Nano Particle Size and Electrophoretic Mobility of the colloidal nano samples such as nano oxides, nano metals, nano composites, nano polymers, nano clays, micelles, microemulsions, quantum dots and nano suspensions, proteins, bio-materials etc. The system should employ backscattering for measurement of concentrated samples to eliminate the multiple scattering. The system should be capable of measuring zeta potential using Electrophoretic Light Scattering. The system should be capable of measuring DLS - Micro-Rheology. The system should be capable of performing Static Light Scattering to measure Molecular weight. System Features should include: •Particle Size measurement range: $\leq 0.3\text{nm}$ to $\geq 10\text{microns}$. •Measurement Angle: Backscatter 173° degrees. •Zeta Potential measurement range: No actual limitation. •Zeta Potential measurement Technique: Electrophoretic Light Scattering. •System should have the provision for molecular weight measurements using Static Light Scattering (about 400 Da to 10^7 Da or higher) using Backscattering Angle for measurements. •Temperature control: Internal sample temperature control/peltier facility should be available with minimum temperature $\leq -10^0\text{ C}$ to 110^0 C or higher. •The system should be flexible enough to be connected to auto titrator •Conductivity Range for Mobility measurements: system should be able to perform measurements at high salt concentrations. •Laser Power: $>10\text{mW}$ or higher power (higher the better) with corresponding optics for higher sensitivity of the instrument. •Measurement Angle: Measurement angles should include preferable backscattering (160° or higher) for determining size and forward scattering (15° or lower) for determining mobility/zeta potential. •Ability to minimise multiple scattering. •Detector: High sensitivity Avalanche Photodiode Detection (APD) for DLS detection and mobility measurements. •Correlator : > 3000 channels - 10^{10} linear dynamic •System should be able to perform DLS-Micro rheology measurements and be able to give MSD, G', G'', η^*, J values. Sample Cells: •For particle size: cuvettes with minimum sample volume about 50 microlitres or less: 100 Nos •For zeta potential: cuvettes with minimum sample volume about 200 microlitres or less preferably 20ul: 10 cuvettes	1

Software: •Standard research grade software should include capability to measure and report size, zeta potential, molecular weight and their distribution along with Trend Analysis methods. •It must be pre-loaded with Dispersion Liquid Properties, editable diluents' list with automatic parameters determination including the viscosity library. •It should use standard algorithms such as NNLS, CONTIN, regularization and Cumulant etc. •The software should have facility to export measured data and result into ASCII format, to facilitate further data processing. •User defined and lockable multi-component standard operating procedures (SOP). •Feature for molecular weight measurements. •Feature for determination of particle charge via simultaneous analysis of hydrodynamic radius and electrophoretic mobility, and determination of the isoelectric point of a sample via interpolation of charge vs pH. •The software should have capabilities to carry out protein studies and its state such as melting point study/crystal screening. System should be able to upgrade to perform following measurements: •Refractive Index Measurements: 1.2 – 1.6 •Concentration measurements: 1×10^8 particles/mL – 1×10^{12} particles/mL •Sedimentation Particle Size: 1 μm – 50 μm •Interface with Size Exclusion Chromatography systems. •Optional Cuvettes and accessories such as: Micro-volume Capillary Sizing Cell, Micro-Volume VH cell, Micro-volume Fluorescence Filtered Cell, Flow Cell Compatible laptop and other associated accessories should be included Minimum Warranty: Five Years Note: All the features claimed by the manufacturers should be available in technical product brochure or official webpage. The same need to be highlighted in the submitted technical brochure.	
Tender Form Fee: Rs. 1,500/- +12% GST	
EMD: Rs. 27,500/-	
Place and date of issue of tender form: Online (www.etenders.kerala.gov.in)	
Tender ID: 2026_KCSTE_873035_1	
Last date & time of receipt of filled tender bids : 06.10.2026 upto 5:00 pm	
Date & time of opening of tender bids : 08.10.2026 at 10:00 am	

S. SREEKUMAR
DIRECTOR(I/C) JNTBGRI