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Specification of Multi-Wavelength Spectropolarimeter (CD) for PROTEIN QUANTITATIVE STRUCTURAL ANALYSIS.

Circular Dichroism spectropolarimeter (CD) for Protein analysis in aqueous samples must be based on accessories to perform secondary structure and tertiary structure analysis and Protein/DNA, protein-ligand interaction study at multiple temperatures.

Following are the brief specifications of each module of CD SPECTROPOLARIMETER

- 1) Light Source: High Intensity 450W water cooled Xenon lamp
- 2) Optional Light Source : Xe-Hg , Halogen
- 3) Detector : Photo-multiplier tubes (PMT) or Extended PMT
- 4) Monochromator : Dual Prism Monochromator
- 5) Wave Length Range : 165-950 nm or similar
- 6) Expandable Wave Length Range : 1600 nm or better should be quoted
- 7) Wavelength Accuracy : 0.2 nm-0.5 nm
- 8) Wavelength Resolution : 0.025 nm
- 9) Spectral Bandwidth : Variable, lowest up to 0.01nm
- 10) Ellipticity Resolution : 0.00002 mdeg OR Better
- 11) Scan Speed: Variable up to 10,000 nm/min or better
- 12) Slit width : variable in the range of 2 μm to 4000 μm
- 13) Ellipticity Scale: ± 8000 mdeg or better
- 14) Accessory Recognition: Automatic
- 15) Baseline Stability: 0.05 mdeg/hr
- 16) RMS Noise: 0.004 mdeg or better
- 17) Temperature controller: Peltier Temperature controller with temp range -30°C to 130°C .

- 18) **Data Acquisition & Software Analysis:** High Speed spectral scan, 3D Scan, Multi-wavelength variable temperature programming, Curve-fitting analysis, Macro command programming, Customizable templates, System validation program. Secondary Structure Estimation, deconvolution analysis.
- 19) **Essential Accessories:** The system must be supplied with essential spares like syringes, tubing, protein cleaning solutions, filters, chiller units, all accessories for N₂ gas purging, and six-CD cuvettes for near UV CD and six CD cuvettes for far UV CD to accommodate lowest sample volume.
- 20) **Computers and accessories:** One Branded state-of-art Desktop PC from a reputed make (with a latest processor at least i5 or i7, LED monitor at least 21" size, 8 GB RAM and 1 TB hard disk and preloaded with latest Operating System software. Power Backup: Online UPS 3kVA with minimum 30 minutes of backup.

- 21) Five years of comprehensive warranty must be included with application support and help in studying the protein structure analysis using CD.
- 22) Provide a list of 5 installations in Institutes of national importance and a list of engineers and application specialists with the organization.