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AUTOMATED DOUBLE-BEAM SPECTROPHOTOMETER WITH A LIGHT-SOURCE UPGRADED SOLID-STATE LASER DYE LCI-301

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The article proposes an automated single-beam spectrophotometer with a light source in the form of upgraded solid state dye laser LCI-301, which uses active laser elements on the epoxy resin or porous glass disk-shaped, allowing to carry out pumping "one point" and placed in an automated rack radiator. Changing the laser range is due to the change of the active laser element by rotating the drum rack. Rotating drum stand at the desired angle by means of a stepper motor. Setting the desired radiation wavelength within the range by means of a piezo-tunable interferometer to which, through digital-analog converter is supplied with the required voltage level computer. Setting the working optical density range is automatically provided polarization attenuator by rotation in accordance with the law of Malus. Rotating the polarization attenuator to the desired angle is provided so as a stepper motor. The upper limit of the measured optical density reaches a value of "4.6". Overall management of the device operation and processing the results of measurements performed on a given computer program.

Keywords: optical density, automation, dyes, laser range spectrophotometer.

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