If lasers alone produced good Raman spectra, there'd be no need for the Cary 81.

Howard Cary—
Chairman of the Board,
Cary Instruments,
a Varian Subsidiary.

For meaningful Raman spectroscopy, highly efficient optics are just as essential as a strong excitation source. We know because, years ago, we built an instrument that had only one of these requirements. We were stuck with the weak sources then available, so we put extra effort into the optical design. The result was the Model 81, which gave useful Raman spectra using mercury arc excitation. Then, with the advent of lasers, we realized our dream of a Raman spectrometer with the speed, breadth of application, and sample volume capacity of infrared equipment.

OUR OPTICAL SYSTEM

Lasers, with their small beam diameters, generally excite small round spots on Raman samples. The key to maximum light-gathering power is to fill the tall entrance slits of the monochromator. Only the Model 81, through its unique image slicer, takes energy from this round spot and converts it into tall thin images that match the entrance slits exactly. We say slits (plural) because another unique feature of the 81 is the Shurcliff double slit system, which essentially superimposes two complete double monochromators in the same space. So the entrance "slit" of the Cary 81 is really two 100 mm slits side-by-side, giving an effective slit height of 200 mm—all filled with Raman energy generated by a spot source.

Working together, the advanced optical design features of the Cary 81 provide at least 7 times more light-gathering power than any other Raman instrument.

Therefore, the 81 analyzes smaller samples, handles more dilute samples and records weaker Raman bands.

SAMPLING VERSATILITY

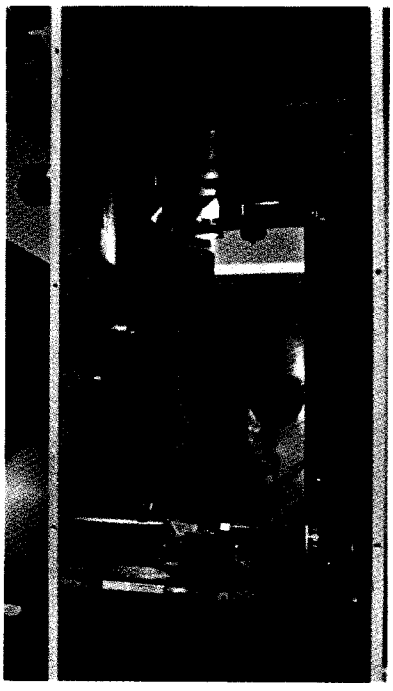
You choose between front and right-angle illumination. The benefit of our coaxial front illumination (only Cary has it) is twofold. For transparent liquids, Raman energy generated along capillary sample cells is collected through total internal reflection. While, for opaque samples, maximum Raman energy is always collected regardless of the opacity or thickness of the sample.

EASE OF OPERATION

No Raman spectrometer is as convenient to use as the Cary 81. A unique coupled scan and chart drive automatically maintains the same wavenumber scale on the chart as you change scan speeds or even reverse the scan. What's more, you can go back and record several spectra on the same section of chart at different sensitivities or scan speeds, an especially useful ability for polarization studies.

A WORD ABOUT RAMAN VERSUS INFRARED

Raman spectroscopy is now a useful, meaningful complement to IR. Sample handling in Raman is actually simpler than in infrared. Symmetrical vibrations of molecules are easily and conveniently observed; and depolarization measurements aid in band assignments. Further, one Raman instrument complements two IR units (at a considerably lower price), since one Raman spectrometer covers a wider wavenumber range than that covered by a standard and a far IR spectrometer combined.



For data and spectra about the 81, write Cary Instruments, 2724 South Peck Road, Monrovia, California 91016. Ask for data file A810-49.

At Cary Instruments, we are continually looking at new applications and new high-intensity sources to use in Raman spectroscopy. For example, the Cary 81 pictured on the left is equipped with both helium-neon and argon-ion laser sources.

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