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6.6.52

Sir K.S. Krishnan, F.R.S.,
Nat. Phys. Lab. of India,
New Delhi,
India.

Dear Sir Kariamanikkam,

I have read your two papers in the P.R.S. which you wrote in collaboration with Dr. Roy.

My interest is two-fold - first, I have been working, with the help of an assistant (Mr. J. Skinner), on the Raman Effect in the alkali halides, and we have been able to get some evidences of polarisation. We have worked on rocksalt, potassium bromide, sodium bromide, potassium chloride, and rubidium bromide. Secondly, I am writing a review article for the Progress in Physics Reports of the Physical Society on The Raman Effect in Solids. For both reasons I am very interested to know how far you have progressed with the third part of your investigation and any later parts which you plan. I intend to make considerable reference to the first two parts, and would be very grateful if you could let me know any conclusions you have reached about later work which I may mention.

Briefly, the experimental work which we have been doing followed this course:

We worked first on rocksalt and obtained clear evidence of depolarisation of the 232 wave number peak, and the remainder of the spectrum was polarised, with the exception

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of a portion quite close to the exciting line. We obtained analogous results with potassium bromide, in this case the 127 wave number peak being depolarised. With KCl we got a result which surprised us at first when there was no strong depolarised peak and the Raman spectrum was of a much weaker intensity than in the first two crystals. We thought it was possible that the effect came about through the masses of the two ions being similar in the KCl and different in the other two cases. We therefore chose two more substances - sodium bromide and rubidium bromide - which would be typical of both classes. We found that their spectra fitted in respectively in the way we had anticipated, i.e. the 154 peak of sodium bromide was strongly depolarised, while the rubidium bromide spectrum was faint and analogous to that of potassium chloride. In later work we have been able to get better estimates of the depolarisation, although you will readily understand that the spectra are not strong to begin with, and after one has put in polarising apparatus it becomes considerably more difficult.

You will probably have forgotten me, but we dined together about three years ago in company with the Whipples. We have, I believe, a good mutual friend in Professor Stoner.

With kind regards,

Yours sincerely,

A.C. Menzies

A.C. Menzies

Controller of Research