Fluorescence Spectrum of Am+3 in LaCl3
D. M. Gruen, John G. Conway, R. D. McLaughlin, and B. B. Cunningham

Citation: The Journal of Chemical Physics 24, 1115 (1956); doi: 10.1063/1.1742710
View online: http://dx.doi.org/10.1063/1.1742710
View Table of Contents: http://scitation.aip.org/content/aip/journal/jcp/24/5?ver=pdfcov
Published by the AIP Publishing

Articles you may be interested in
Energy Levels of Am IV in LaCl3

Absorption Spectrum and Zeeman Effect of Am3+ in LaCl3

An Analysis of the Infrared Absorption Spectrum of Am+3(5f 6) in LaCl3

Analysis of the Absorption and Fluorescence Spectrum of NdCl3 Diluted with LaCl3

Fluorescence Spectrum of Pu+3 in LaCl3
Letters to the Editor

Infrared Spectra of Polystyrenes and Long CLCds as-Polymerizates

Rex H. Perkinson

The infrared spectra of some highly ordered, exceptionally polymerizable mixtures of normal paraffins, together with an examination of the Tolleson report on this subject, indicate that several very unusual infrared absorptions are present.

According to the usual interpretation of the very strong infrared absorption at 5 micron wavelength as a doublet of Y transitions between the methyl groups, the C-H bending and rocking modes are resolved into two bands. However, the present work has failed to resolve this into two distinct bands, as the C-H bending and rocking modes are not well resolved. The C-H bending and rocking modes are more apparent in the infrared spectrum of the long chain polyethylene.

The long chain polyethylene absorbs at 1380 cm⁻¹, which is characteristic of the C-H bending mode. However, it is also observed in the infrared spectrum of the long chain polyethylene, indicating that the C-H bending mode is present in both the long chain polyethylene and the long chain polyethylene.

The long chain polyethylene exhibits a very strong absorption at 610 cm⁻¹, which is characteristic of the C-H rocking mode. This absorption is observed in the infrared spectrum of the long chain polyethylene, indicating that the C-H rocking mode is present in both the long chain polyethylene and the long chain polyethylene.

In addition, the long chain polyethylene exhibits a very strong absorption at 3100 cm⁻¹, which is characteristic of the C-H stretching mode. This absorption is observed in the infrared spectrum of the long chain polyethylene, indicating that the C-H stretching mode is present in both the long chain polyethylene and the long chain polyethylene.

The long chain polyethylene exhibits a very strong absorption at 1100 cm⁻¹, which is characteristic of the C-C stretching mode. This absorption is observed in the infrared spectrum of the long chain polyethylene, indicating that the C-C stretching mode is present in both the long chain polyethylene and the long chain polyethylene.

The long chain polyethylene exhibits a very strong absorption at 700 cm⁻¹, which is characteristic of the C-Cl stretching mode. This absorption is observed in the infrared spectrum of the long chain polyethylene, indicating that the C-Cl stretching mode is present in both the long chain polyethylene and the long chain polyethylene.

The long chain polyethylene exhibits a very strong absorption at 500 cm⁻¹, which is characteristic of the C-N stretching mode. This absorption is observed in the infrared spectrum of the long chain polyethylene, indicating that the C-N stretching mode is present in both the long chain polyethylene and the long chain polyethylene.

The long chain polyethylene exhibits a very strong absorption at 300 cm⁻¹, which is characteristic of the C-O stretching mode. This absorption is observed in the infrared spectrum of the long chain polyethylene, indicating that the C-O stretching mode is present in both the long chain polyethylene and the long chain polyethylene.

The long chain polyethylene exhibits a very strong absorption at 300 cm⁻¹, which is characteristic of the C-Cl stretching mode. This absorption is observed in the infrared spectrum of the long chain polyethylene, indicating that the C-Cl stretching mode is present in both the long chain polyethylene and the long chain polyethylene.

The long chain polyethylene exhibits a very strong absorption at 300 cm⁻¹, which is characteristic of the C-O stretching mode. This absorption is observed in the infrared spectrum of the long chain polyethylene, indicating that the C-O stretching mode is present in both the long chain polyethylene and the long chain polyethylene.

The long chain polyethylene exhibits a very strong absorption at 300 cm⁻¹, which is characteristic of the C-Cl stretching mode. This absorption is observed in the infrared spectrum of the long chain polyethylene, indicating that the C-Cl stretching mode is present in both the long chain polyethylene and the long chain polyethylene.

The long chain polyethylene exhibits a very strong absorption at 300 cm⁻¹, which is characteristic of the C-O stretching mode. This absorption is observed in the infrared spectrum of the long chain polyethylene, indicating that the C-O stretching mode is present in both the long chain polyethylene and the long chain polyethylene.

The long chain polyethylene exhibits a very strong absorption at 300 cm⁻¹, which is characteristic of the C-Cl stretching mode. This absorption is observed in the infrared spectrum of the long chain polyethylene, indicating that the C-Cl stretching mode is present in both the long chain polyethylene and the long chain polyethylene.

The long chain polyethylene exhibits a very strong absorption at 300 cm⁻¹, which is characteristic of the C-O stretching mode. This absorption is observed in the infrared spectrum of the long chain polyethylene, indicating that the C-O stretching mode is present in both the long chain polyethylene and the long chain polyethylene.
The Raman spectrum of liquid hydrogen was observed by J. C. McLennan and S. Freed. They observed that the Raman spectrum of liquid hydrogen was in the region above the zero drift by a few tenths above the zero drift of the liquid found in a conventional Pyrex cuvette. The tube was irradiated by a monochromatic LED source located on the cuvette top, and the scattered light was observed through the top of the cuvette by a monochromatic LED arrangement. To control the rotation of the liquid hydrogen, two helium rotors were used, one in the cuvette top and the other in the cuvette bottom for periods of several hours. The spectrum was photographed in liquid He-CO$_2$-O$_2$ with a two-pinhole grating, with a wavelength of 60 cm$^{-1}$ per mm of the grating.

Spectrograms were obtained with a monochromatic LED with a monochromatic LED prepared by the method of B. E. Clark and coworkers. To obtain spectra of liquid hydrogen in liquid He-CO$_2$-O$_2$, the liquid hydrogen was excited by a LED and the LED was detected by a photomultiplier under the conditions of the experiment. In parahydrogen-He-CO$_2$-O$_2$-mixing lines and the LED lines were observed. The data, summarized in Table I, are compared with the Raman spectrum observed in liquid.

<table>
<thead>
<tr>
<th>Wavelength (cm$^{-1}$)</th>
<th>Intensity</th>
</tr>
</thead>
<tbody>
<tr>
<td>2148.6</td>
<td>0.9</td>
</tr>
<tr>
<td>2150.6</td>
<td>0.8</td>
</tr>
<tr>
<td>2152.6</td>
<td>0.7</td>
</tr>
<tr>
<td>2154.6</td>
<td>0.6</td>
</tr>
<tr>
<td>2156.6</td>
<td>0.5</td>
</tr>
</tbody>
</table>

This is a continuation of previous work by J. C. McLennan and S. Freed. In this work they observed that the Raman spectrum of liquid hydrogen was in the region above the zero drift by a few tenths above the zero drift of the liquid found in a conventional Pyrex cuvette. The tube was irradiated by a monochromatic LED source located on the cuvette top, and the scattered light was observed through the top of the cuvette by a monochromatic LED arrangement. To control the rotation of the liquid hydrogen, two helium rotors were used, one in the cuvette top and the other in the cuvette bottom for periods of several hours. The spectrum was photographed in liquid He-CO$_2$-O$_2$ with a two-pinhole grating, with a wavelength of 60 cm$^{-1}$ per mm of the grating.

Spectrograms were obtained with a monochromatic LED with a monochromatic LED prepared by the method of B. E. Clark and coworkers. To obtain spectra of liquid hydrogen in liquid He-CO$_2$-O$_2$, the liquid hydrogen was excited by a LED and the LED was detected by a photomultiplier under the conditions of the experiment. In parahydrogen-He-CO$_2$-O$_2$-mixing lines and the LED lines were observed. The data, summarized in Table I, are compared with the Raman spectrum observed in liquid.

<table>
<thead>
<tr>
<th>Wavelength (cm$^{-1}$)</th>
<th>Intensity</th>
</tr>
</thead>
<tbody>
<tr>
<td>2148.6</td>
<td>0.9</td>
</tr>
<tr>
<td>2150.6</td>
<td>0.8</td>
</tr>
<tr>
<td>2152.6</td>
<td>0.7</td>
</tr>
<tr>
<td>2154.6</td>
<td>0.6</td>
</tr>
<tr>
<td>2156.6</td>
<td>0.5</td>
</tr>
</tbody>
</table>

This is a continuation of previous work by J. C. McLennan and S. Freed. In this work they observed that the Raman spectrum of liquid hydrogen was in the region above the zero drift by a few tenths above the zero drift of the liquid found in a conventional Pyrex cuvette. The tube was irradiated by a monochromatic LED source located on the cuvette top, and the scattered light was observed through the top of the cuvette by a monochromatic LED arrangement. To control the rotation of the liquid hydrogen, two helium rotors were used, one in the cuvette top and the other in the cuvette bottom for periods of several hours. The spectrum was photographed in liquid He-CO$_2$-O$_2$ with a two-pinhole grating, with a wavelength of 60 cm$^{-1}$ per mm of the grating.

Spectrograms were obtained with a monochromatic LED with a monochromatic LED prepared by the method of B. E. Clark and coworkers. To obtain spectra of liquid hydrogen in liquid He-CO$_2$-O$_2$, the liquid hydrogen was excited by a LED and the LED was detected by a photomultiplier under the conditions of the experiment. In parahydrogen-He-CO$_2$-O$_2$-mixing lines and the LED lines were observed. The data, summarized in Table I, are compared with the Raman spectrum observed in liquid.

| Wavelength (cm$^{-1}$) | Intensity |