Abstract:-

This work is devoted to see whether waves can be utilized to measure the temperature. The theoretical relations shows the possibility of performing this task by utilizing Zeeman effect to force material the to absorb waves and re-emit them again. The spectrum of this re-emitted wave can then observed at different temperatures. The broadening of the spectral lines as a function of temperature can then be utilized to determine the temperature. This relation is verified experimentally by using corn and sesame oil. The ultraviolet spectra of these oils shows the change of the spectral line-width with temperature , where the spectral width decrease as the temperature increase. This technique can be applied to measure atmospheric temperature by using suitable waves like radar wave .

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