

## ABSTRACT

### INFRA-RED ANALYSIS OF DIAMONDS

The invention provides a method of automating the classification of a diamond gemstone. An infra-red absorption spectrum of the gemstone is provided. Features corresponding to absorption by water and intrinsic absorption by a diamond lattice are subtracted from the absorption spectrum. The spectrum is analysed to identify predetermined absorption features corresponding to lattice defects in the diamond. The gemstone is classified according to the intensities of the predetermined absorption features. The results of the classification are saved in a database.

Fig. 3

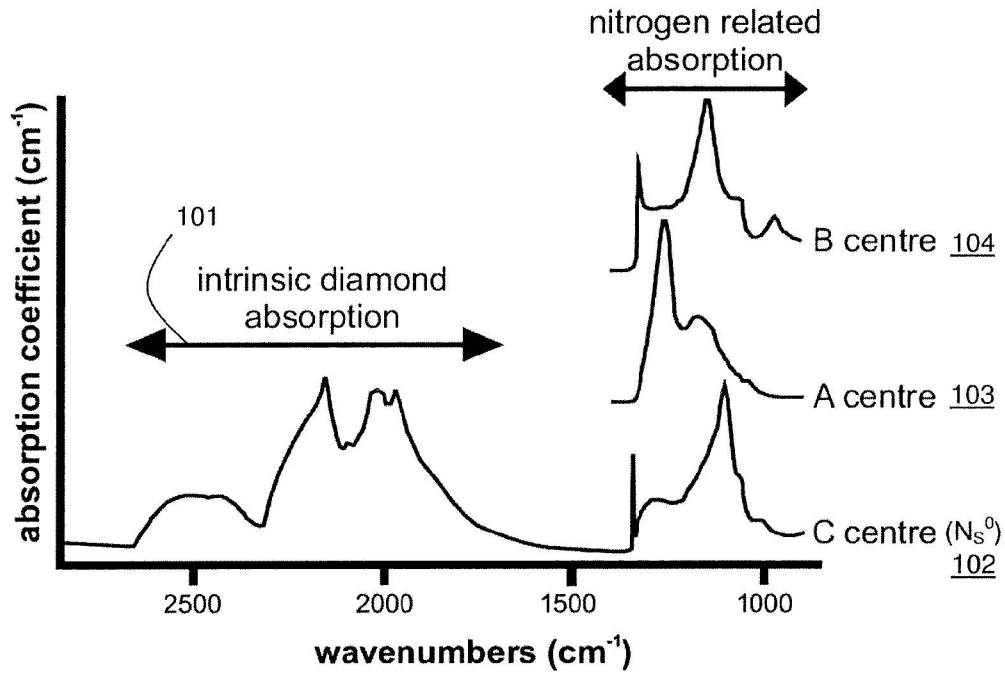


Figure 1

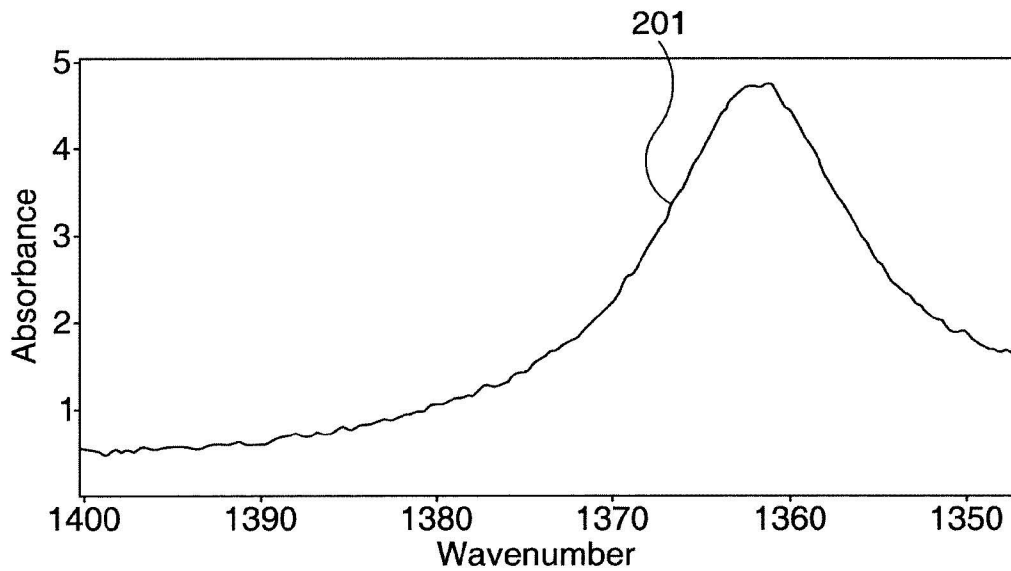


Figure 2

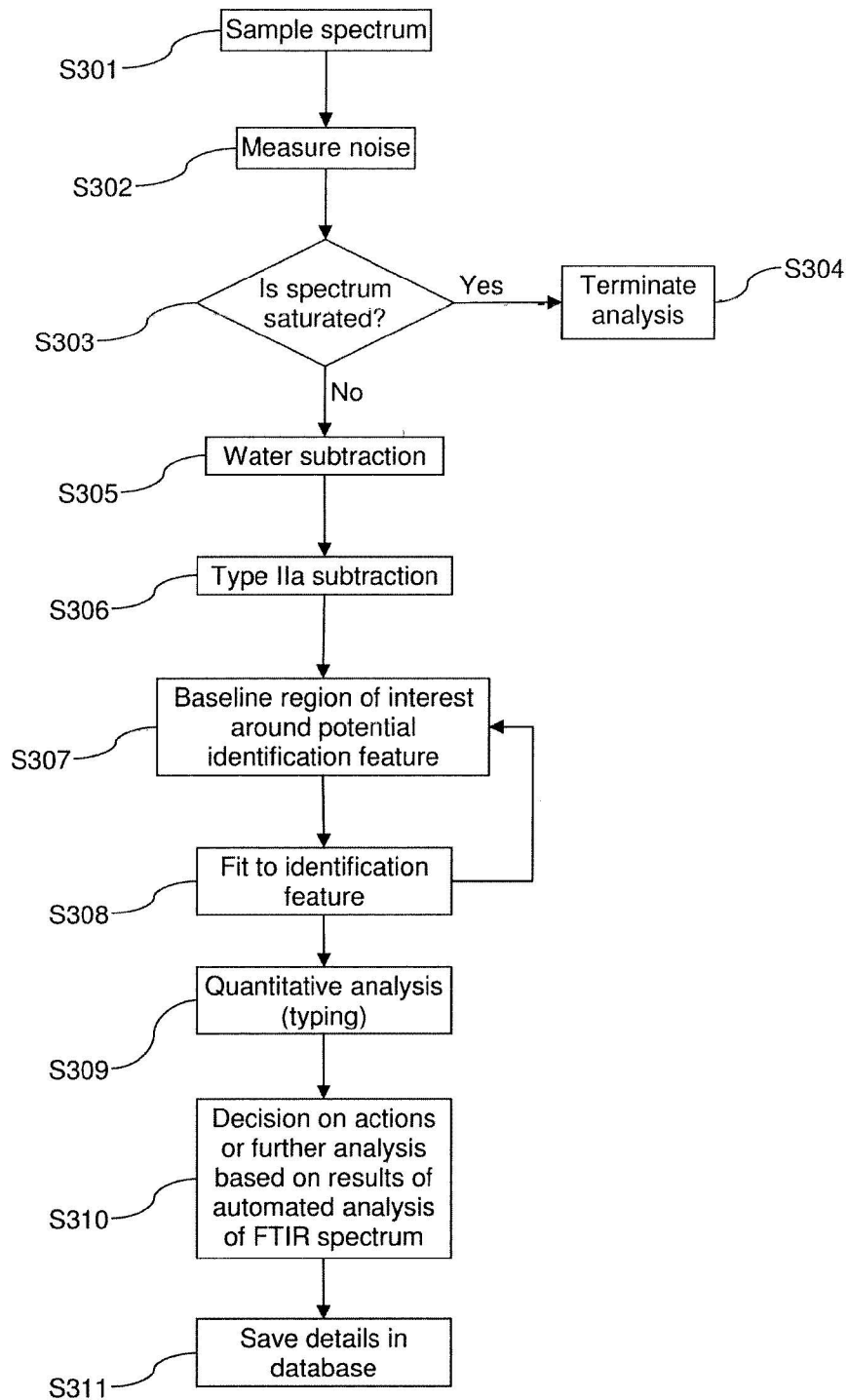


Figure 3

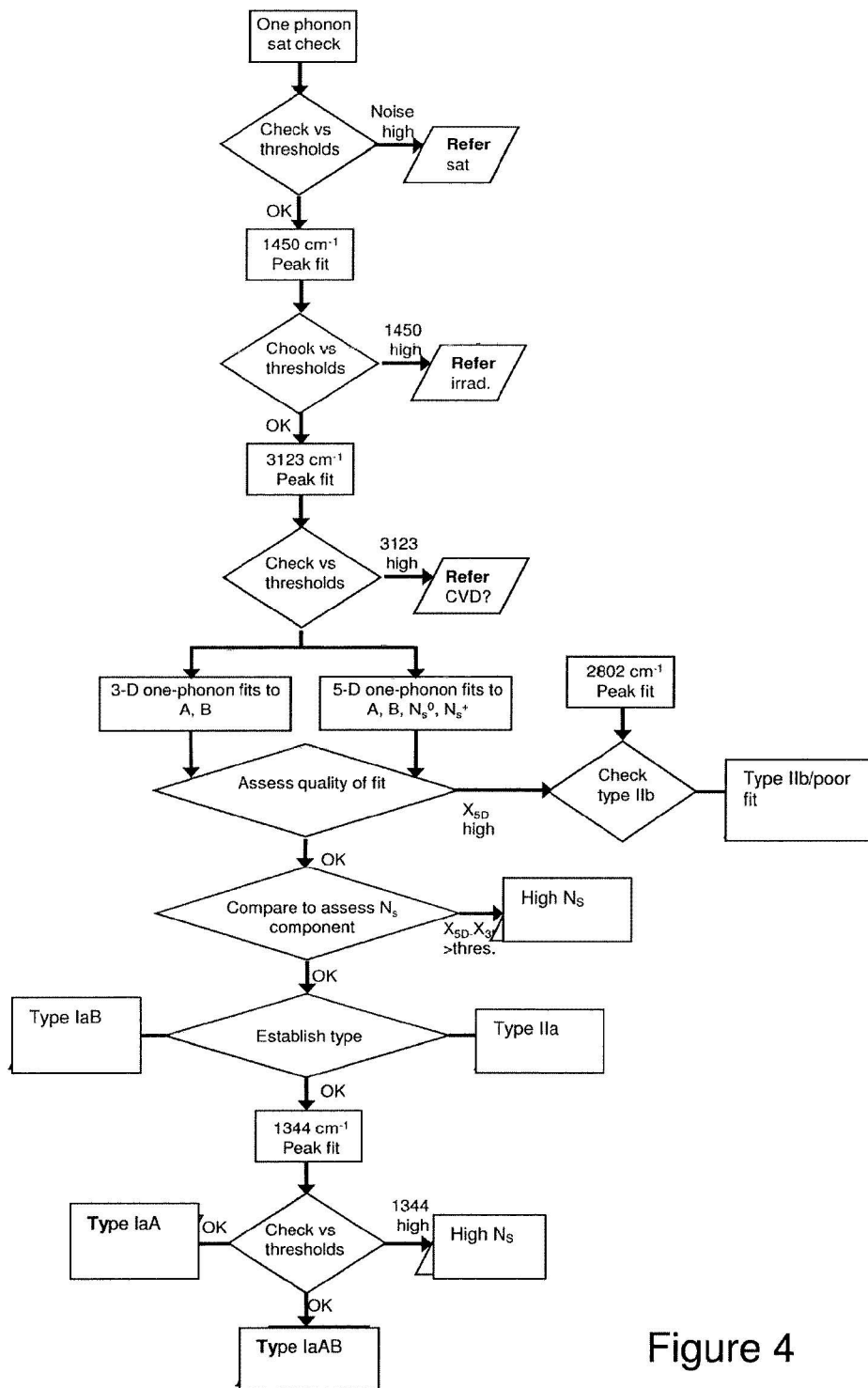


Figure 4

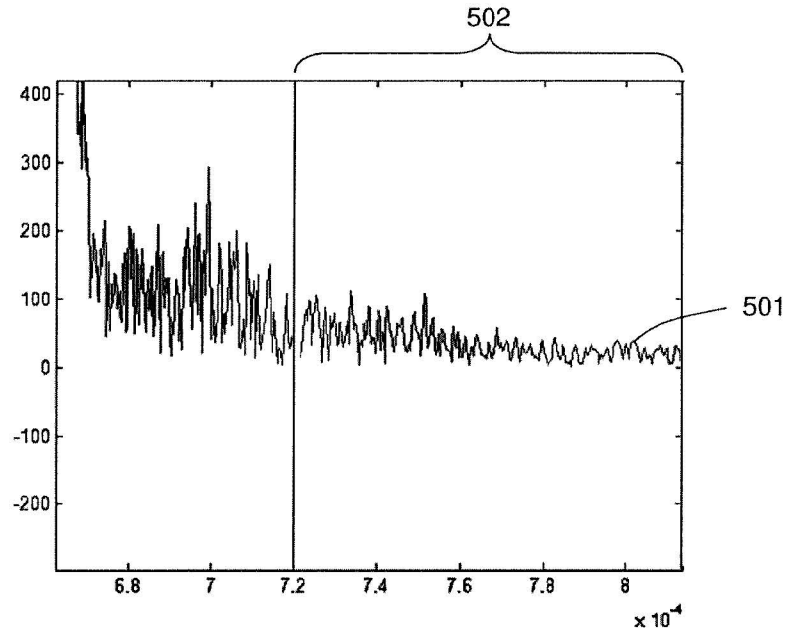


Figure 5

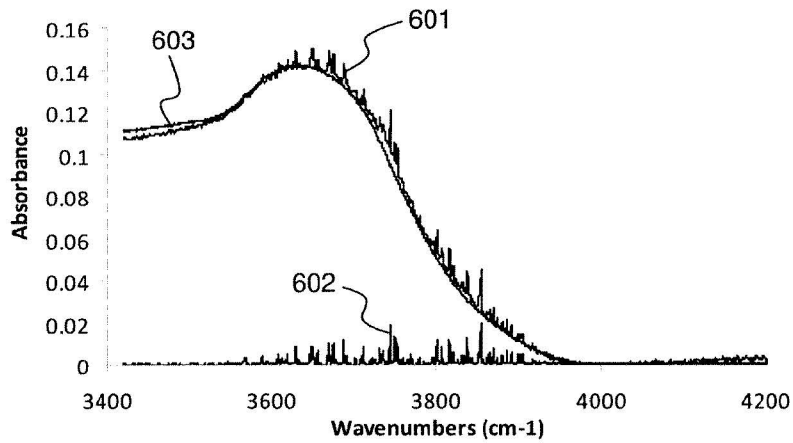


Figure 6

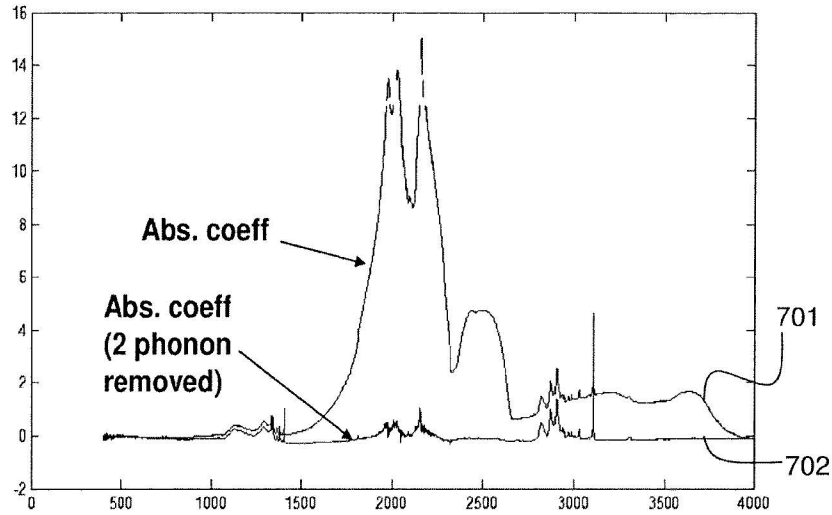


Figure 7

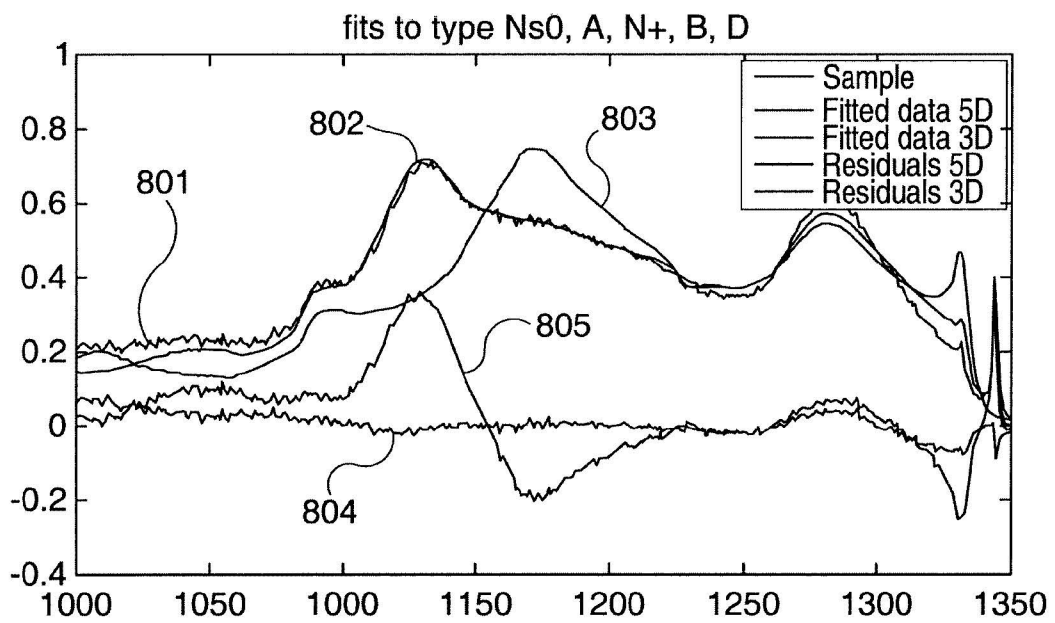


Figure 8

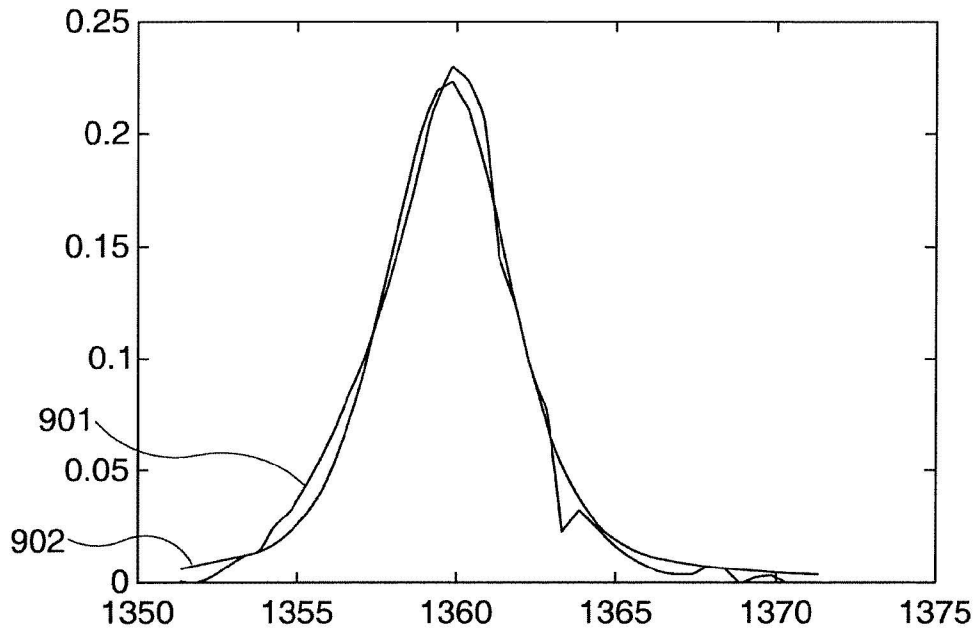


Figure 9

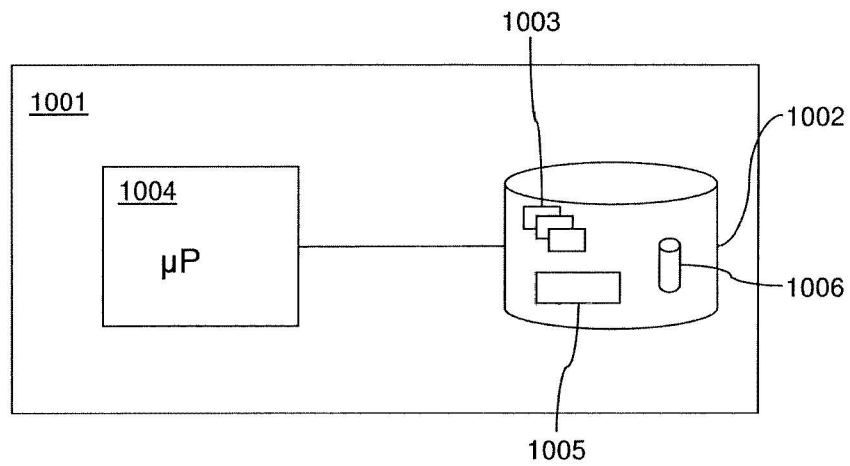


Figure 10