

Supplementary Materials

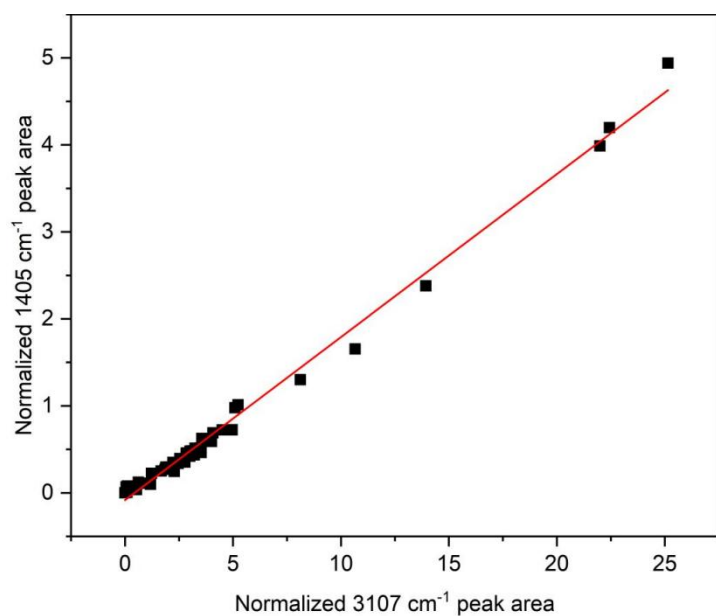


Figure S1. The linear relationship of peak area between 3107 and 1405 cm^{-1} , the slope value is 0.19.

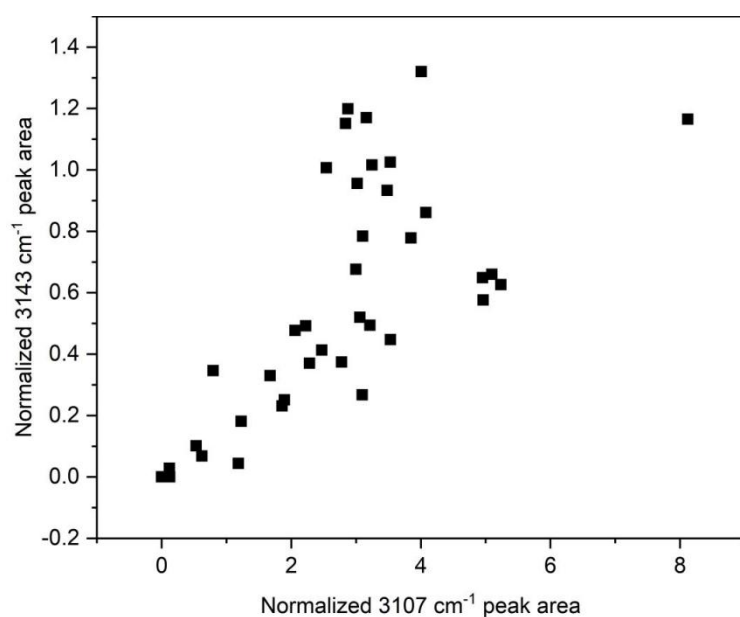


Figure S2. There was no strict linear relationship about the peak area between the 3107 and 3143 cm^{-1} defects. The absorption intensity of 3143 cm^{-1} is much weaker than that of 3107 cm^{-1} . Generally, the stronger the absorption of 3107 cm^{-1} , the stronger the absorption of 3143 cm^{-1} is.

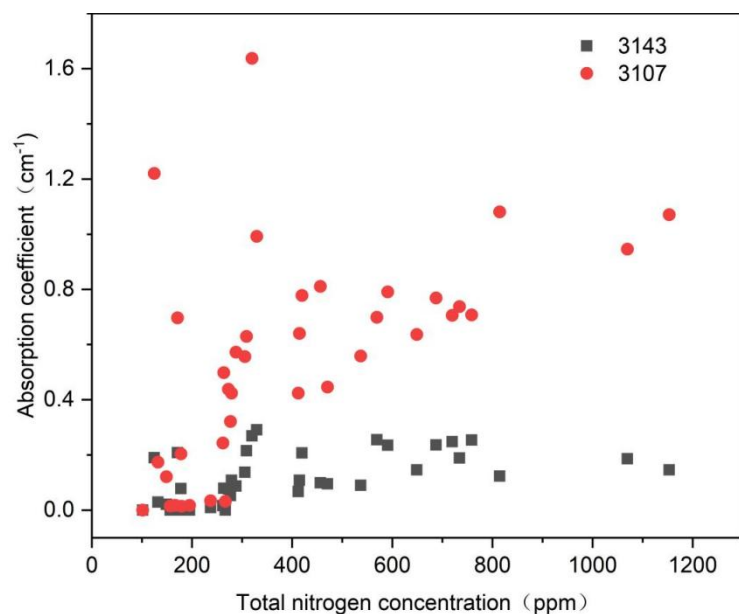


Figure S3. If there is 3107 cm^{-1} defect in the diamond, the higher the total nitrogen, the more the 3107 cm^{-1} defect. However, the 3143 cm^{-1} defect do not related to the total nitrogen concentration.

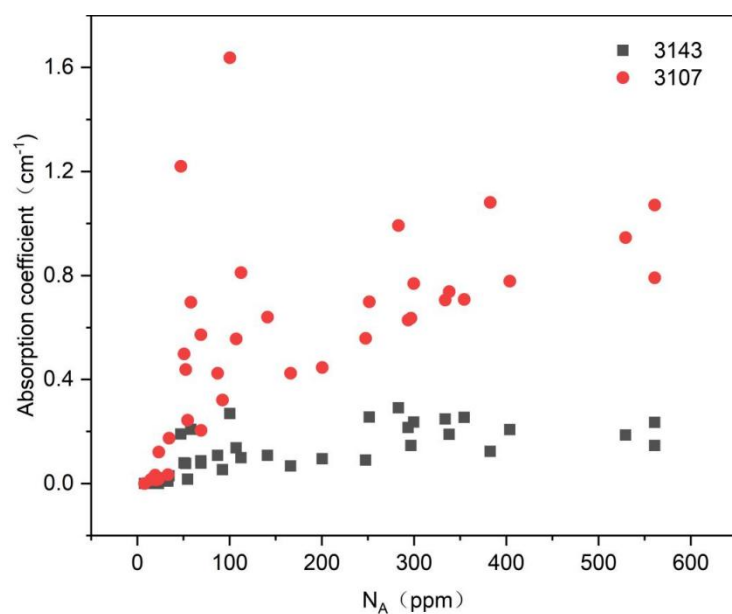


Figure S4. There is a similar relationship between the A center and the total nitrogen concentration with the 3107 and 3143 cm^{-1} defects.

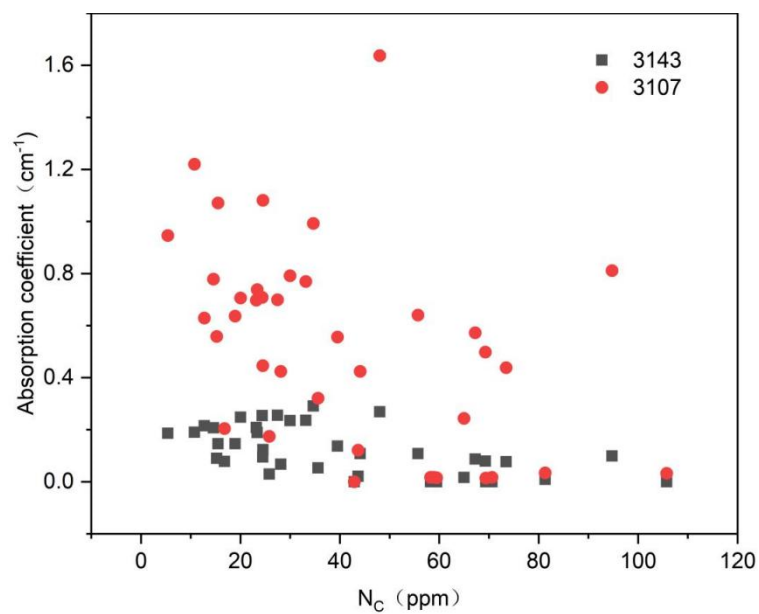


Figure S5. There was no correlation between the C center concentration and the 3107,4143 cm^{-1} defects.

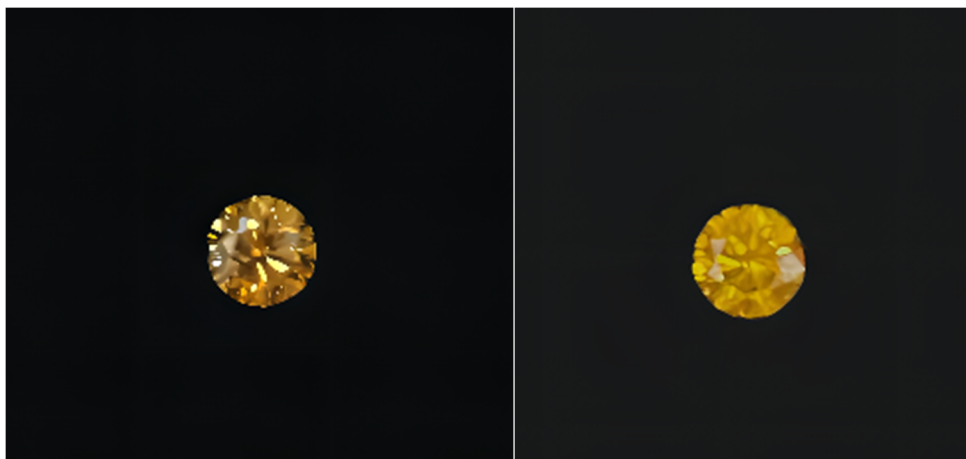


Figure S6. the color change of DIAM 10703 before and after high temperature annealing (left: before annealing; right: after annealing)