



Doctoral Thesis

Mikrowellenspektrum, Dipolmoment und Struktur von Cyclobutanon

Author(s):

Bauder, Alfred Christian

Publication Date:

1963

Permanent Link:

<https://doi.org/10.3929/ethz-a-000089199> →

Rights / License:

[In Copyright - Non-Commercial Use Permitted](#) →

This page was generated automatically upon download from the [ETH Zurich Research Collection](#). For more information please consult the [Terms of use](#).

Prom.-Nr. 3239

Mikrowellenspektrum, Dipolmoment und Struktur von Cyclobutanon

Von der

EIDGENÖSSISCHEN TECHNISCHEN
HOCHSCHULE IN ZÜRICH

zur Erlangung
der Würde eines Doktors der
Naturwissenschaften
genehmigte

PROMOTIONSARBEIT

Vorgelegt von

ALFRED CHRISTIAN BAUDER
dipl. Naturwissenschaftler E. T. H.
von Zürich

Referent: Herr Prof. Dr. Hs. H. Günthard
Korreferent: Herr Prof. H. Primas

Basel
Buchdruckerei Birkhäuser AG.
1963

SUMMARY

The microwave spectra of cyclobutanone and of three isotopically substituted cyclobutanone molecules have been measured and the rotational constants determined. From the observation of the STARK effect it could be concluded that the four-membered carbon ring must be planar. Further it was possible to calculate the structure of cyclobutanone from the moments of inertia, with only one arbitrary assumption. STARK effect measurements yielded a value of 2,98 D for the dipole moment of cyclobutanone.
