
**Elements Of
Optical Mineralogy
- An Introduction
To Microscopic
Petrography**

Alexander N. Winchell

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components OF OPTICAL MINERALOGY AN creation TO MICROSCOPIC PETROGRAPHY by means of ALEXANDER N. WINCHELL, Doct. Univ. Paris Professor of Mineralogy and Petrology, collage of Wisconsin moment EDITION, moment PRINTING half III. DETERMINATIVE TABLES WITH a coloured CHART AND DIAGRAMS long island JOHN WILEY SONS, INC. LONDON CHAPMAN HALL, restricted 939 COPYRIGHT, 1929, 1939 through ALEXANDER N. WINCHELL All Rights Reserved This booklet or any half thereof must never be reproduced in any shape with out the written permission of the publisher. published IN U. S. A. PRESS OF BRAUNWORTH A CO., INC. developers OF BOOKS BRIDGEPORT. CONN. PREFACE TO the second one version moment PRINTING throughout the ten years because the book of the second one variation of those tables many new minerals were described. approximately fifty of those are incorporated within the 3rd version of half II, which used to be released in 1933, whereas approximately seventy are of more modern date. the writer has tried to incorporate in supplementary tables during this printing all of the new minerals which appear to be good confirmed and effectively defined as to their optical properties. regrettably it has now not been possible to include them basically tables, yet this is often not really a truly severe trouble because the minerals in query are all very rare. it's was hoping that using coloured paper for the desk III classify ing minerals at the foundation in their colour and pleochroism in skinny part will make it effortless to discover many of the tables fast and conveniently. within the instruction of this printing the writer has benefited via the help and encouragement of his wife, Florence S. Winchell. ALEXANDER N. WINCHELL MADISON, WISCONSIN March, 1939 PREFACE TO THE SECONDEDITION Or path tables ready for the choice of minerals by means of optical equipment Elements of Optical Mineralogy - An Introduction to Microscopic Petrography will be in keeping with the Elements of Optical Mineralogy - An Introduction to Microscopic Petrography executive optical houses of the minerals. However, it isn't in any respect seen simply which optical prop erty may be used first in classifying the minerals. After numerous makes an attempt to mix an important houses in a single desk in order that multiple of them can be used first, it appeared wiser to simplify the association via making separate tables for every vital property. as well as the tables that are given, tables could be ready Elements of Optical Mineralogy - An Introduction to Microscopic Petrography dependent essentially upon the optic angle, optic sign, or extinction angles. However, the sensible teams established upon optic attitude or optic signal are too few in quantity to be satisfactory, whereas extinction angles are virtually dead in distinguishing among tetragonal, hexagonal and orthorhombic minerals. hence it comes approximately that the manager tables that are given are established upon refringence, or birefringence, or colour and pleochroism. because the dispersion tools of identifying minerals come into wider use the desk dependent upon dispersion turns into extra entire and extra useful. it's a excitement to recognize that those tables were stronger because of considerate positive feedback of the 1st draft by way of Professor F. F. Grout of the collage of Minnesota the author has additionally had the good thing about a chance to check copies of determinative mineral tables ready by way of Professor Grout and others ready by means of Professor D. J. Fisher of the collage of Chicago.

He has additionally benefited particularly by way of common consultations with Professor R. C. Emmons of the collage of Wisconsin. Plate II, according to refringence and birefringence, has been prepared alongside traces recommended through Professor C. O. Swanson of the Michigan collage of Mines and Professor R. H. B. Jones of the kingdom collage of Washington. ALEXANDER N. WINCHELL. MADISON, WISCONSIN, January, 1929 vu CONTENTS web page advent i desk I. OPAQUE MINERALS 7 desk II. BIREFRINGENCE OF MINERALS Elements of Optical Mineralogy - An Introduction to Microscopic Petrography 10 SUPPLEMENTARY desk II. BIREFRINGENCE OF MINERALS seventy six desk III. colour OF MINERALS cross SUPPLEMENTARY desk III. colour OF MINERALS one hundred thirty desk IVA. REFRIINGENCE OF ISOTROPIC MINERALS 136 SUPPLEMENTARY desk IVA. REFRIINGENCE OF ISOTROPIC MINERALS 141 desk IVB...

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