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Further Evidence of the Effect of Valence and Chemical Combination on the K Limit of Sulphur

R. A. Rogers
State University of Iowa

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RESULTS AND COMPARISONS

ELEMENT	LIMIT	λ (PREDICTED)	λ (OBSERVED)	DIFFERENCE	AUTHOR
W (74)	M ₂	6.6500	6.475	-0.175	Zumstein
Os (76)	M ₂	6.08	5.975	-0.105	Rogers
Ir (77)	M ₂	5.86	5.754	-0.106	Rogers
Pt (78)	M ₂	5.6413	5.539	-0.1023	Rogers
Bi (83)	M ₂	4.5886	4.569	-0.0196	Coster
Th (90)	M ₂	3.5519	3.552	+0.0001	Stenstrom
Ur (92)	M ₂	3.3258	3.3260	+0.0002	Stenstrom

RESULTS AND COMPARISONS

ELEMENT	LIMIT	λ (PREDICTED)	λ (OBSERVED)	DIFFERENCE	AUTHOR
W (74)	M ₃	5.4664	5.418	-0.0484	Zumstein
Os (76)	M ₃	5.06	5.027	-0.033	Rogers
Ir (77)	M ₃	4.88	4.851	-0.029	Rogers
Pt (78)	M ₃	4.6947	4.674	-0.0207	Rogers
Bi (83)	M ₃	3.8942	3.894	-0.0002	Coster
Th (90)	M ₃	3.0580	3.058	0.0000	Stenstrom
Ur (92)	M ₃	2.8730	2.873	0.0000	Stenstrom

RESULTS AND COMPARISONS

ELEMENT	LIMIT	λ (PREDICTED)	λ (OBSERVED)	DIFFERENCE	AUTHOR
W (74)	M ₄	4.8419	4.800	-0.0419	Zumstein
Os (76)	M ₄	4.430	4.400	-0.030	Rogers
Ir (77)	M ₄	4.260	....	.....	Rogers
Pt (78)	M ₄	4.079	....	.....	Rogers
Bi (83)	M ₄	3.3306	....	.....	Coster
Th (90)	M ₄	2.5690	2.571	+0.002	Coster
Ur (92)	M ₄	2.3923	2.385	-0.0073	Coster

RESULTS AND COMPARISONS

ELEMENT	LIMIT	λ (PREDICTED)	λ (OBSERVED)	DIFFERENCE	AUTHOR
W (74)	M ₅	4.4051	4.365	-0.0401	Zumstein
Os (76)	M ₅	4.07	4.0375	-0.0325	Rogers
Ir (77)	M ₅	3.92	....	.....	Rogers
Pt (78)	M ₅	3.756	3.738	-0.018	Rogers
Bi (83)	M ₅	3.0919	....	.....	Coster
Th (90)	M ₅	2.3886	2.388	-0.0006	Coster
Ur (92)	M ₅	2.2313	2.228	-0.0033	Coster

STATE UNIVERSITY OF IOWA,
IOWA CITY, IOWA.

FURTHER EVIDENCE OF THE EFFECT OF VALENCE
AND CHEMICAL COMBINATION ON THE
K LIMIT OF SULPHUR

R. A. ROGERS

(ABSTRACT)

A number of spectrograms have been obtained showing the K absorption limit of sulphur. The absorption was due to sulphur

in the gypsum ($\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$) crystal used in the analysis of the M series absorption spectra of the platinum group.

The results contained in the table below support the evidence of Lindh¹ that the limit of sulphur with higher valence is of shorter wave length than that of crystalline sulphur for which Fricke² reports 5.0123 Angstroms. However, the values here obtained seem to show a slightly higher value than that presented by Lindh.

RESULTS SULPHUR K ABSORPTION

PLATE	REFERENCE LINES	(λ)	AUTHOR
105	Pb α — Pb β	4.9889	R
105	S α — Pb β	4.9899	R
115	S α — Pb β	4.9919	R
115	S α — Pb β	4.9915	R
116	S α — Pb β	4.9917	R
116	Pb α — Pb β	4.9913	R
116	S α — Pb β	4.9914	R
118	Pb α — Pb β	4.9919	R
118	S α — Bi β	4.9906	R
118	S α — Bi α	4.9903	R
120	Pb α — Bi β	4.9891	R
120	Bi α — Bi β	4.9902	R
	Average	4.9907	Rogers
	$\text{CaSO}_4 (+2\text{H}_2\text{O})$	4.9877	Lindh

STATE UNIVERSITY OF IOWA,
IOWA CITY, IOWA.

A NEW TYPE OF PHOTOELECTRIC COLORIMETER

D. H. PALMER AND JAY W. WOODROW

(*ABSTRACT*)

A photoelectric colorimeter has been constructed which is capable of detecting small changes in the color of meat. With this apparatus it was possible to measure the variation in the color of meat as a function of the time of exposure to the air. The effects of temperature upon the color variation were also measured; and some data has been obtained showing the relation between the color and the grade of the meat.

IOWA STATE COLLEGE,
AMES, IOWA.

¹ Lindh, Diss., Lund.

² Fricke, Phys. Rev., Vol. 16, 1920, p. 202.