

Thursday, August 30, 2012

ICfE-8 Udine

JUDD - OFELT

1962 - 2012

PHYSICAL REVIEW VOLUME 127, NUMBER 1 AUGUST 1, 1962
Optical Absorption Intensities of Rare-Earth Ions
 B. R. JUDD
Lawrence Radiation Laboratory, University of California, Berkeley, California
 (Received March 12, 1960)

Electric dipole transitions within the $4f$ shell of a rare-earth ion are permitted if the surroundings of the ion are such that its selection is not situated at a center of inversion. An expression is found for the oscillator strength of a transition between two states of the ground configuration $4f^n$, on the assumption that the

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Intensities of Crystal Spectra of Rare-Earth Ions*

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 (Received February 26, 1962)

Magnetic and electric dipole transitions between levels of the $4f^n$ configuration perturbed by a static crystalline field are considered. The expressions obtained for the pure electric dipole transition probability involves matrix elements of magnetic units and tensor between the two $4f^n$ states involved in the transition. The contributions to the transition probability from interactions, via the crystalline field, with the upper and lower $4f^n$ configurations are shown to add incoherently, in such a manner as to multiply each of 3 crystal field parameters, F_2 , F_4 by a constant $11/7$ "message" as the $4f^n$ configuration is $4f^7/4f^6/4f^5/4f^4/4f^3/4f^2/4f^1/4f^0$; the upper and lower $4f^n$ levels is involved in an $4f^n$ transition. The "message" is neglected then $1/7$ is also referred to six units of 10^{-4} . Applications are made to the fluorescence spectra of Pr^{3+} and Eu^{3+} . Many of the missing and weak transitions are explained.

$$S_{a_j, a_j'} = \sum_{\lambda} \Omega_{\lambda} | \langle a_j || U^{(\lambda)} || a_j' \rangle |^2$$

Two solo-s, two separate tunes,
 two instruments (=approaches)
 not a duet, but one concert!

JUDD-OFELT CONCERT



	Room A
15.00-15.20	Golden anniversary
15.20-15.40	J-O Theory
15.40-16.10	
	Room A
16.10-16.30	Golden anniversary
16.30-16.50	J-O Theory
16.50-17.10	

*Flute solo selections by Sterling Yco,
 George Ofelt's Granddaughter*



40th anniversary



*Piano solo selections from
 Scott Joplin by Brian Judd*

2003, Ładdek, Poland

