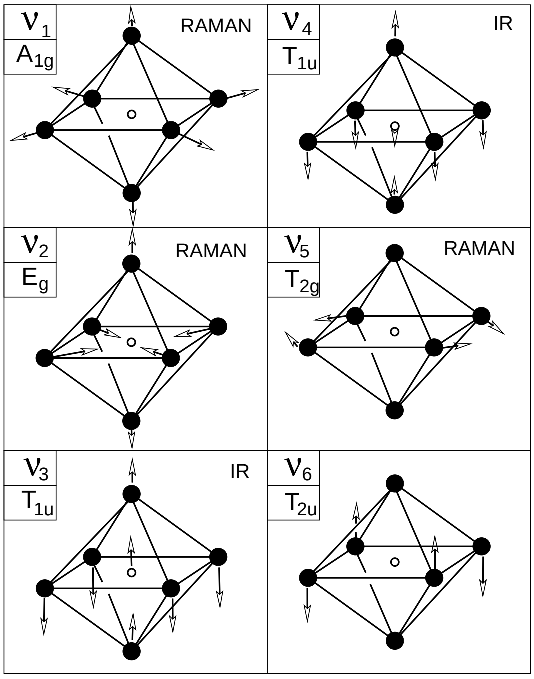
7. Schwingungsspektroskopie (Raman, IR) (Forts.)

7.4. Beispiel: Oktaeder

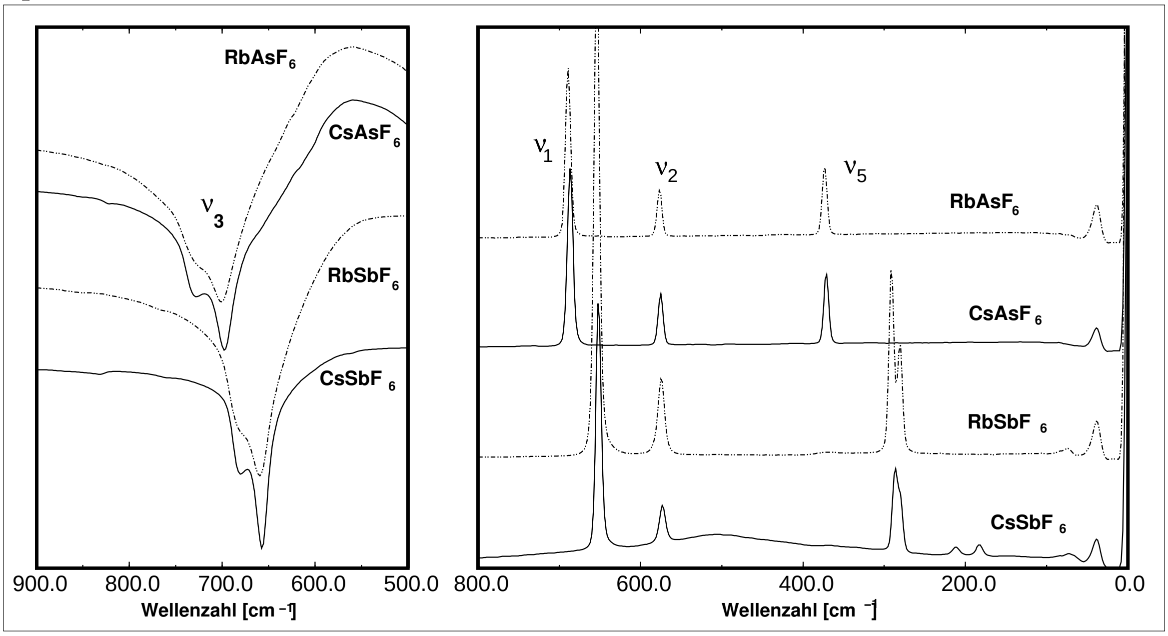
Charaktertafel der Punktgruppe O_h

O_h	E	8 C_3	6 C_2	6 C_4	3 C_2	i	6 S_4	8 S_6	3 σ_h	6 σ_d		
A_{1g}	+1	+1	+1	+1	+1	+1	+1	+1	+1	+1		$x^2 + y^2 + z^2$
A_{2g}	+1	+1	-1	-1	+1	+1	-1	+1	+1	-1		
E_g	+2	-1	0	0	+2	+2	0	-1	+2	0		$(2z^2 - x^2 - y^2, x^2 - y^2)$
T_{1g}	+3	0	-1	+1	-1	+3	+1	0	-1	-1	(R_x, R_y, R_z)	
T_{2g}	+3	0	+1	-1	-1	+3	-1	0	-1	+1		(xy, yz, xy)
A_{1u}	+1	+1	+1	+1	+1	-1	-1	-1	-1	-1		
A_{2u}	+1	+1	-1	-1	+1	-1	+1	-1	-1	+1		
E_u	+2	-1	0	0	+2	-2	0	+1	-2	0		
T_{1u}	+3	0	-1	+1	-1	-3	-1	0	+1	+1	(x,y,z)	
T_{2u}	+3	0	+1	-1	-1	-3	+1	0	+1	-1		

Normalschwingungen



Spektren



MIR- (links) und Raman- (rechts) Spektren von Oktaedern $[M^VF_6]^-$