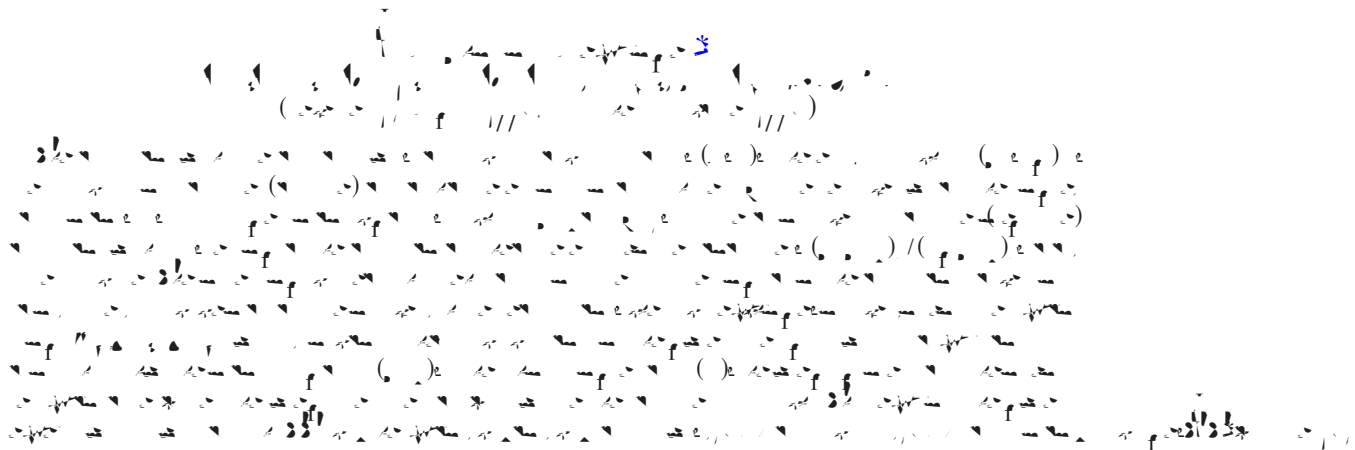


**II-VI oxides phase separate whereas the corresponding carbonates order:
The stabilizing role of anionic groups**



Example 2.5. Consider the function $f(x) = x^2 \sin\left(\frac{1}{x}\right)$ for $x \neq 0$ and $f(0) = 0$. We have $f'(x) = 2x \sin\left(\frac{1}{x}\right) - \cos\left(\frac{1}{x}\right)$ for $x \neq 0$ and $f'(0) = \lim_{x \rightarrow 0} \frac{f(x) - f(0)}{x - 0} = \lim_{x \rightarrow 0} x \sin\left(\frac{1}{x}\right) = 0$. Thus $f'(0) = 0$ and $f'(x) = 0$ if and only if $2x \sin\left(\frac{1}{x}\right) - \cos\left(\frac{1}{x}\right) = 0$. Since $\cos\left(\frac{1}{x}\right) = 0$ if and only if $\frac{1}{x} = \frac{\pi}{2} + k\pi$ for some integer k , it follows that $f'(x) = 0$ if and only if $x = \frac{1}{\frac{\pi}{2} + k\pi}$ for some integer k . This shows that f has a local minimum at $x = \frac{1}{\frac{\pi}{2} + k\pi}$ if $k > 0$ and a local maximum at $x = \frac{1}{\frac{\pi}{2} + k\pi}$ if $k < 0$. The local extrema of f are therefore at $x = \frac{1}{\frac{\pi}{2} + k\pi}$ for all integers k . The local extrema of f are therefore at $x = \frac{1}{\frac{\pi}{2} + k\pi}$ for all integers k . The local extrema of f are therefore at $x = \frac{1}{\frac{\pi}{2} + k\pi}$ for all integers k . Δ

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III. FORMATION ENTHALPIES OF RANDOM AND ORDERED CaO-MgO AND CaCO₃-MgCO₃

The formation enthalpies of random and ordered CaO-MgO and CaCO₃-MgCO₃ are discussed in this section. The formation enthalpy of random CaO-MgO is given by the following equation:

$$\Delta_f H_{CaO-MgO} = \Delta_f H_{CaO} + \Delta_f H_{MgO} - \Delta_f H_{CaMgO_2}$$

where $\Delta_f H_{CaO}$, $\Delta_f H_{MgO}$, and $\Delta_f H_{CaMgO_2}$ are the formation enthalpies of CaO, MgO, and CaMgO₂, respectively. The formation enthalpy of ordered CaO-MgO is given by the following equation:

$$\Delta_f H_{CaO-MgO} = \Delta_f H_{CaO} + \Delta_f H_{MgO} - \Delta_f H_{CaMgO_2}$$

where $\Delta_f H_{CaO}$, $\Delta_f H_{MgO}$, and $\Delta_f H_{CaMgO_2}$ are the formation enthalpies of CaO, MgO, and CaMgO₂, respectively. The formation enthalpy of random CaCO₃-MgCO₃ is given by the following equation:

$$\Delta_f H_{CaCO_3-MgCO_3} = \Delta_f H_{CaCO_3} + \Delta_f H_{MgCO_3} - \Delta_f H_{CaMg(CO_3)_2}$$

where $\Delta_f H_{CaCO_3}$, $\Delta_f H_{MgCO_3}$, and $\Delta_f H_{CaMg(CO_3)_2}$ are the formation enthalpies of CaCO₃, MgCO₃, and CaMg(CO₃)₂, respectively. The formation enthalpy of ordered CaCO₃-MgCO₃ is given by the following equation:

$$\Delta_f H_{CaCO_3-MgCO_3} = \Delta_f H_{CaCO_3} + \Delta_f H_{MgCO_3} - \Delta_f H_{CaMg(CO_3)_2}$$

where $\Delta_f H_{CaCO_3}$, $\Delta_f H_{MgCO_3}$, and $\Delta_f H_{CaMg(CO_3)_2}$ are the formation enthalpies of CaCO₃, MgCO₃, and CaMg(CO₃)₂, respectively.

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V. DECORATION OF METAL SUBLATTICE BY DIFFERENT CATIONS AT FIXED VOLUME: ΔE_{CE}

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VI. CELL-INTERNAL RELAXATION: ΔE_{SR}

A. Oxides

Δ ($\%$) Δ ($\%$) Δ ($\%$)

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VII. CONCLUSIONS

The present study is concerned with the effect of the structure of the interaction Hamiltonian on the dynamics of a two-level system coupled to a reservoir. The interaction Hamiltonian is assumed to be of the form $H_I = \sum_k (g_k a^\dagger + g_k^* a) \sigma_x$, where a and a^\dagger are the annihilation and creation operators of the reservoir, and σ_x is the Pauli matrix. The dynamics of the system is described by the Schrödinger equation, which is solved by the method of perturbation theory. The results show that the structure of the interaction Hamiltonian has a significant effect on the dynamics of the system. In particular, it is shown that the structure of the interaction Hamiltonian determines the rate of decay of the system's state.

The structure of the interaction Hamiltonian is assumed to be of the form $H_I = \sum_k (g_k a^\dagger + g_k^* a) \sigma_x$, where a and a^\dagger are the annihilation and creation operators of the reservoir, and σ_x is the Pauli matrix. The dynamics of the system is described by the Schrödinger equation, which is solved by the method of perturbation theory. The results show that the structure of the interaction Hamiltonian has a significant effect on the dynamics of the system.

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