

A REGULARLY ALTERNATING  
ISING–HEISENBERG CHAIN. METHOD  
OF DECORATION-ITERATION  
TRANSFORMATION

*B.M. Lisnii*

Institute for Condensed Matter Physics,  
Nat. Acad. of Sci. of Ukraine  
(1, *Sviientsitskii Str.*, *Lviv 79011, Ukraine*;  
*e-mail: lisnyj@icmp.lviv.ua*)

S u m m a r y

A regularly alternating spin-1/2 Ising–Heisenberg chain with the  $XYZ$  anisotropic Heisenberg interaction is considered. By using the method of decoration-iteration transformation, the exact results concerning the free energy, the magnetizations of the Ising and Heisenberg sublattices, and a number of spin correlations are obtained. The role of  $XY$  anisotropy in the Heisenberg interaction is demonstrated for the process of magnetization.