**An ab initio study of magnetism in nanocomposite Fe-Pd and Fe-Pt systems**

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We perform a density functional theory study of ordered magnetic

configurations in nanostructured Fe-Pd and Fe-Pt face-centered cubic (FCC)

based intermetallics with low Fe content, namely FeX3, FeX7, FeX8 and

FeX15 (X = Pd or Pt), that contain iron fibres in the platinum or

palladium matrix.

The pseudopotential code VASP (Vienna Ab initio Simulation Package) is

used to determine the equilibrium lattice parameters of the FCC-based

structures and corresponding total energies.

Nonmagnetic, ferromagnetic and selected antiferromagnetic arrangements are

considered and the configurations with the lowest energies are discussed

in detail, including concentration dependence of both equilibrium volumes

and magnetic moments.