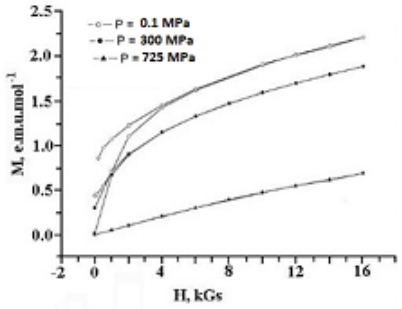
Quantum pezomagnetic effect in molecular based compounds.

Liedienov N., Berezhnaya L., Filimonov G., Levchenko G.,

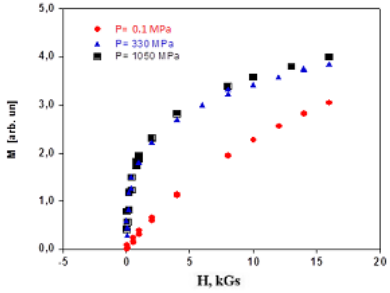
Donetsk Physical-Technical Institute named after A.A. Galkin Ukraine
E-mail: g-levch@ukr.net

The molecular and molecular based magnets are of current interest for today because of its perspectives for application. There is a big group of magnetic ordered compounds (Prussian blue family) with ordering temperature from 4K up to 435K. In some of these compounds was observed quantum pezomagnetic effect. In all cases, one observes a decreasing of the magnetic moment and even vanishing of the magnetic ordering under pressure. It is very important to install the possibility of the magnetic moment increase under pressure at pezomagnetic effect.

Here we present the behavior of the magnetic moment of the Prussian blue compounds $M_xCo_4[Fe(CN)_6]_3 nH_2O$ (**1**) and $K_{0,5}Mn_4[Fe(CN)_6]_3*6H_2O$ (**2**).



Magnetic moment of (**1**) in magnetic field under different pressure at 4.2K



Magnetic moment of (**2**) in magnetic field under different pressure at 4.2K

One can see the increase of the magnetic moment under pressure for $K_{0,5}Mn_4[Fe(CN)_6]_3*6H_2O$ and decrease for $M_xCo_4[Fe(CN)_6]_3 nH_2O$. It means that under quantum pezomagnetic effect the magnetic moment can be decreased and increased also. So using pressure we can improve the magnetic properties of the molecular based magnets. It is very important for application of these materials.

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