

# Electronic Coupling among the Five Nanomolecules Shuts Down Quantum Tunneling in the Presence and Absence of an Applied Magnetic Field for Indication of the Dimer or other Provide Different Influences on the Magnetic Behavior of Single Molecular Magnets (SMMs) as Qubits for Quantum Computing

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Because of environmental concerns, the Wreath-shaped  $Mn_{84}$ ,  $Mn_{12}O_{12}(O_2CC_6H_5)_{16}(H_2O)_4$ ,  $Mn_4O_3Cl_4(O_2CCH_2CH_3)_3(pyridine)_3$ ,  $Mn_4Re_4$  and  $Mn-ON-Ni-NO-Mn-O_2$  repeat unit Nano clusters content in Nano compounds has come under security; therefore, it is necessary to explore possibilities to reduce these Wreath-shaped  $Mn_{84}$ ,  $Mn_{12}O_{12}(O_2CC_6H_5)_{16}(H_2O)_4$ ,  $Mn_4O_3Cl_4(O_2CCH_2CH_3)_3(pyridine)_3$ ,  $Mn_4Re_4$  and  $Mn-ON-Ni-NO-Mn-O_2$  repeat unit Nano clusters content [1-27]. In this opinion, the application of several Wreath-shaped  $Mn_{84}$ ,  $Mn_{12}O_{12}(O_2CC_6H_5)_{16}(H_2O)_4$ ,  $Mn_4O_3Cl_4(O_2CCH_2CH_3)_3(pyridine)_3$ ,  $Mn_4Re_4$  and  $Mn-ON-Ni-NO-Mn-O_2$  repeat unit Nano clusters as electronic coupling among the five nanomolecules shuts down quantum tunneling in the presence and absence of an applied magnetic field for indication of the dimer or other provide different influences on the magnetic behavior of Single Molecular Magnets (SMMs) as qubits for quantum computing are discussed, in order to find alternatives for the conventionally used  $Mn_{84}$ ,  $Mn_{12}O_{12}(O_2CC_6H_5)_{16}(H_2O)_4$ ,  $Mn_4O_3Cl_4(O_2CCH_2CH_3)_3(pyridine)_3$ ,  $Mn_4Re_4$  and  $Mn-ON-Ni-NO-Mn-O_2$  repeat unit Nano clusters and fatty acid activator system. The effects of different  $Mn_{84}$ ,  $Mn_{12}O_{12}(O_2CC_6H_5)_{16}(H_2O)_4$ ,  $Mn_4O_3Cl_4(O_2CCH_2CH_3)_3(pyridine)_3$ ,  $Mn_4Re_4$  and  $Mn-ON-Ni-NO-Mn-O_2$  repeat unit Nano clusters on the cure and physico-mechanical properties of two widely different Nano compounds are studied.  $Mn_{84}$ ,  $Mn_{12}O_{12}(O_2CC_6H_5)_{16}(H_2O)_4$ ,  $Mn_4O_3Cl_4(O_2CCH_2CH_3)_3(pyridine)_3$ ,  $Mn_4Re_4$  and  $Mn-ON-Ni-NO-Mn-O_2$  repeat unit Nano clusters of Triethanolamine (TEA), Thiodiglycol (2,2'-bis-hydroxyethylsulfide, TDG) and 2,2'-Dithiobis(benzothiazole) (MBTS) were synthesized and characterized by ordinary spectroscopies methods such as  $^1H$ NMR,  $^{13}C$ NMR,  $^{31}P$ NMR, Attenuated Total Reflectance Fourier Transform Infrared (ATR-FTIR), FT-Raman, UV-Vis and HR Mass spectroscopies, etc. After characterization of target  $Mn_{84}$ ,  $Mn_{12}O_{12}(O_2CC_6H_5)_{16}(H_2O)_4$ ,  $Mn_4O_3Cl_4(O_2CCH_2CH_3)_3(pyridine)_3$ ,  $Mn_4Re_4$  and  $Mn-ON-Ni-NO-Mn-O_2$  repeat unit Nano clusters, the application of them were studied

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in Nano compounds based on electronic coupling among the five nanomolecules shuts down quantum tunneling in the presence and absence of an applied magnetic field for indication of the dimer or other provide different influences on the magnetic behavior of Single Molecular Magnets (SMMs) as qubits for quantum computing. The physico-mechanical properties of obtained Nano compounds were investigation by ordinary experimental tools.

$Mn_{84}$ ,  $Mn_{12}O_{12}(O_2CC_6H_5)_{16}(H_2O)_4$ ,  $Mn_4O_3Cl_4(O_2CCH_2CH_3)_3(pyridine)_3$ ,  $Mn_4Re_4$  and  $Mn-ON-Ni-NO-Mn-O_2$  repeat unit Nano clusters in ubiquitous in nature where it several important roles. Recently, it has been identified as HIV-1 non-nucleoside reverse transcriptase inhibitor, which led to the idea of developing novel synthetic  $Mn_{84}$ ,  $Mn_{12}O_{12}(O_2CC_6H_5)_{16}(H_2O)_4$ ,  $Mn_4O_3Cl_4(O_2CCH_2CH_3)_3(pyridine)_3$ ,  $Mn_4Re_4$  and  $Mn-ON-Ni-NO-Mn-O_2$  repeat unit Nano clusters. Several synthetic methodologies have appeared in which  $Mn_{84}$ ,  $Mn_{12}O_{12}(O_2CC_6H_5)_{16}(H_2O)_4$ ,  $Mn_4O_3Cl_4(O_2CCH_2CH_3)_3(pyridine)_3$ ,  $Mn_4Re_4$  and  $Mn-ON-Ni-NO-Mn-O_2$  repeat unit Nano clusters is involved as an activating group and its use as intermediates in total synthesis of many natural products has become a classic.

Furthermore,  $Mn_{84}$ ,  $Mn_{12}O_{12}(O_2CC_6H_5)_{16}(H_2O)_4$ ,  $Mn_4O_3Cl_4(O_2CCH_2CH_3)_3(pyridine)_3$ ,  $Mn_4Re_4$  and  $Mn-ON-Ni-NO-Mn-O_2$  repeat unit Nano clusters have been recently used for the synthesis of anti-cancer Nano drugs. Since little information is known on the synthesis of  $Mn_{84}$ ,  $Mn_{12}O_{12}(O_2CC_6H_5)_{16}(H_2O)_4$ ,  $Mn_4O_3Cl_4(O_2CCH_2CH_3)_3(pyridine)_3$ ,  $Mn_4Re_4$  and  $Mn-ON-Ni-NO-$

$Mn-O_2$  repeat unit Nano clusters, we have carried out the reaction of organocobaloximes with aryldisulfonyl chlorides  $ClO_2S-Ar-Ar-SO_2Cl$  having two reactive of  $SO_2-Cl$  bonds, under photochemical and anaerobic conditions at  $0^\circ C$  to give a variety of anti-cancer Nano drugs including the disulfones, dimer and O-Organocobaloxime (dmgH-ethers) in variable yields.

## References

- 1 Wark PA, Peto J (2017) Cancer Epidemiology. (2ndEdn), International Encyclopedia of Public Health, Academic Press, Oxford, pp: 339-346.
- 2 Miller AB (2017) Cancer Prevention. (2<sup>nd</sup> edn.), International Encyclopedia of Public Health, Academic Press, Oxford, pp: 381-388.
- 3 Seventer JMV, Hochberg NS (2017) Principles of Infectious Diseases: Transmission, Diagnosis, Prevention, and Control. (2<sup>nd</sup> edn.), International Encyclopedia of Public Health, Academic Press, Oxford, pp: 22-39.
- 4 Petridou ET, Antonopoulos CN (2017) Injury Epidemiology. (2<sup>nd</sup> edn.), International Encyclopedia of Public Health, Academic Press, Oxford, pp: 258-274.
- 5 Trostle JA (2017) Cultural Epidemiology. (2<sup>nd</sup> edn.), International Encyclopedia of Public Health, Academic Press, Oxford pp: 191-197.
- 6 Irgens LM (2017) Epidemiology: Historical. (2ndEdn), International Encyclopedia of Public Health, Academic Press, Oxford, pp: 530-546.
- 7 Myer L, Susser E, Link BG, Morroni C (2017) Social Epidemiology. (2<sup>nd</sup> edn.), International Encyclopedia of Public Health, Academic Press, Oxford, pp: 574-585.
- 8 Enstrom JE (2017) Epidemiology of Vitamin C. (2ndEdn), International Encyclopedia of Public Health, Academic Press, Oxford, pp: 559-568.
- 9 Kelsey JL, Gold EB (2017) Observational Epidemiology. (2<sup>nd</sup> edn.), International Encyclopedia of Public Health, Academic Press, Oxford, pp: 295-307.
- 10 Kono S, (2017) Gastric Cancer. (2ndEdn), International Encyclopedia of Public Health, Academic Press, Oxford, pp: 215-222.
- 11 Landry JS, Menzies D (2017) Tuberculosis Prevention. (2<sup>nd</sup> edn.), International Encyclopedia of Public Health, Academic Press, Oxford, pp: 246-251.
- 12 Outwater AH, Leshabari SC, Nolte E (2017) Disease Prevention: An Overview. (2<sup>nd</sup> edn.), International Encyclopedia of Public Health, Academic Press, Oxford, pp: 338-349.
- 13 Cheng VC, Chan JF, Fan-Ngai HI, Kwok-Yung Y (2017) Viral Infections, an Overview with a Focus on Prevention of Transmission. (2<sup>nd</sup> edn.), International Encyclopedia of Public Health, Academic Press, Oxford, pp: 368-377.
- 14 Wilhelmsen L (2017) Cardiovascular Disease Prevention. (2<sup>nd</sup> edn.), International Encyclopedia of Public Health, Academic Press, Oxford, pp: 438-447.
- 15 Campbell H, Anderson N (2017) Genetic Epidemiology. (2<sup>nd</sup> edn.), International Encyclopedia of Public Health, Academic Press, Oxford, pp: 248-252.
- 16 Rutherford A (2017) Violence/Intentional Injuries – Epidemiology and Overview. (2<sup>nd</sup> edn.), International Encyclopedia of Public Health, Academic Press, Oxford, pp: 344-350.
- 17 Miettinen OS (2017) Demography, Epidemiology, and Public Health. (2<sup>nd</sup> edn.), International Encyclopedia of Public Health, Academic Press, Oxford, pp: 223-225.
- 18 Kravchenko JS (2017) Diet and Cancer. (2<sup>nd</sup> edn.), International Encyclopedia of Public Health, Academic Press, Oxford, pp: 294-304.
- 19 O'Callaghan DS, O'Connell F (2017) Lung Cancer. (2<sup>nd</sup> edn.), International Encyclopedia of Public Health, Academic Press, Oxford, pp: 477-484.
- 20 Sikora K (2017) Future Organization of Cancer Care. (2<sup>nd</sup> edn.), International Encyclopedia of Public Health, Academic Press, Oxford, pp: 204-214.
- 21 Woodhouse LC, Edmondson RJ (2017) Ovarian Cancer. (2<sup>nd</sup> edn.), International Encyclopedia of Public Health, Academic Press, Oxford, pp: 378-382.
- 22 Mitry E (2017) Colorectal Cancer. (2<sup>nd</sup> edn.), International Encyclopedia of Public Health, Academic Press, Oxford, pp: 75-81.
- 23 Pelucchi C, Negri E (2017) Bladder Cancer. (2<sup>nd</sup> edn.), International Encyclopedia of Public Health, Academic Press, Oxford, pp: 233-238.
- 24 Stiller CA (2017) Pediatric Cancers. (2<sup>nd</sup> edn.), International Encyclopedia of Public Health, Academic Press, Oxford, pp: 426-437.
- 25 Leo DD, Krysinska K (2017) Suicide and Self-directed Violence. (2<sup>nd</sup> Edn), International Encyclopedia of Public Health, Academic Press, Oxford, pp: 115-123.
- 26 Thacker SB, Sencer DJ, Jaffe HW (2017) Centers for Disease Control. (2<sup>nd</sup> Edn), International Encyclopedia of Public Health, Academic Press, Oxford, pp: 448-454.
- 27 Wang Y and Wang L (2017) Child Obesity and Health. (2<sup>nd</sup> edn.), International Encyclopedia of Public Health, Academic Press, Oxford, pp: 487-501.