

Abstract Submitted
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Praeseodymium -123: 30 Years Later... Why Isn't It Superconducting... or Even Conducting? MARIA LOPEZ-MORALES, Ohlone Community College, PAUL GRANT, W2AGZ Technologies — The years 1986-87 witnessed the explosion of the discovery of the rare earth copper oxide perovskite family of high temperature superconductors. Alone of those with the single phase RE-123 stoichiometry that remained non-superconducting...or even conducting ...at all temperatures down to 0.4 K was Pr-123.¹ Today, this finding remains one of the principal mysteries of the HTSC family of compounds. We revisit this continuing conundrum from the perspective of today, 30 years later, and explore various quantum models which might clarify this issue, as well as propose possible applications of Pr-123 films to embody Landauer-Buttger ballistic-controlled “smart” gates in future MOSFET devices.²

¹ M.E. Lopez-Morales, et al., Physical Review B 41, 6655 (1990).

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² P.M. Grant, Possible Quantum Transport in Pr-123 Perovskites, 2012 Meeting of the Cal-Nev Section of the APS.

http://w2agz.com/Presentations/2012/11-02%20Cal-Nev-APS%20San%20Luis%20Obispo/Cal_Poly_Talk-

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