

Abstract Submitted
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Experimental Demonstration of Memory Capacitance and Memory Resistance in VO₂ devices TOM DRISCOLL, DIMITRI BASOV, MASSIMILIANO DI VENTRA, University of California, San Diego, HYUN-TAK KIM, BYUNG-GYU CHAE, E.T.R.I. Korea, NAN JOKERST, SABARNI PALIT, DAVID SMITH, Duke University — Memristors are a special case of non-linear resistors which store information about the history of applied voltage in their instantaneous resistance value. These memory-resistors have attracted considerable attention for their possible uses in information storage and neuromorphic circuits. The same circuit principles behind memory-resistance have been extended to postulate that memory-capacitance and memory-inductance phenomena are also likely to exist¹. In this talk, we discuss experimental results from a Vanadium-Dioxide device which exhibits memory-capacitance². The nanoscale phase-separation phenomena which underlie this memory-capacitance suggest similar effects may exist in a variety of materials.

[1]. M. Di Ventra et.al. Proc. IEEE 97, 1717 (2009)

[2]. T.Driscoll et.al. Science. 325, 1518 (2009)

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