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Slow relaxations in glasses: full aging and beyond
YOSEPH IMRY, The Weizmann Institute of Science, ARIEL AMIR,
Harvard University, YUVAL OREG, The Weizmann Institute of Sci-
ence, STEFANO BORINI, INRIM, Torino — Experiments performed
in the last years demonstrated slow relaxations and aging in the con-
ductance of a large variety of materials. Here, we present experimen-
tal and theoretical results for conductance relaxation and aging for the
case-study example of porous silicon. The relaxations are experimen-
tally observed even at room temperature over time scales of hours, and
when a strong electric field is applied for a time t_w , the ensuing relax-
ation depends on t_w . We derive a theoretical curve and show that all
experimental data collapse onto it with a single time scale as a fitting
parameter. This time scale is found to be of the order of thousands
of seconds at room temperature. The generic theory suggested is not
fine-tuned to porous silicon, and thus we believe the results should be
universal, and the presented method should be applicable for many other
systems manifesting memory and other glassy effects. Reference: Phys.
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Yoseph Imry
The Weizmann Institute of Science

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