Sudeep Sarkar on team creating new form of computing using circular nanomagnets

Sudeep Sarkar along with Sanjukta Bhanja, D.K. Karunaratne, Ravi Panchumarthy, and Srinath Rajaram (all from Electrical Engineering) have proposed a new form of computing that uses circular nanomagnets to solve quadratic optimization problems orders of magnitude faster than that of a conventional computer. By exploiting the magnetization states of nanomagnetic disks as state representations of a vortex and single domain, the research team has created a modeling framework to address the vortex and in-plane single domain in a unified framework and developed a magnetic Hamiltonian which is quadratic in nature.

This work has been published in Nature Nanotechnology titled as “Non Boolean computing with nanomagnets for computer vision applications.” This work was sponsored in part by multiple NSF grants. Most of the fabrication and characterization was done at USF Nanotechnology Research and Education Center (NREC).

More information can be found here: http://www.eurekalert.org/pub_releases/2015-10/uosf-utf102815.php