ABSTRACT

Binary and multiple-valued nonvolatile content addressable memories (NVCAMs) use ferroelectric capacitors as nonvolatile storage elements. The operation of the NVCAMs is accessed either in serial or in parallel. In a 2-bit NVCAM of a parallel access structure, search operation is performed by a simultaneous scan across a 4-level memory and the ferroelectric capacitor array structure. The total number of search operations is reduced.

16 Claims, 8 Drawing Sheets