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Improved Patterned Media for Probe-Based HAMR EMMANUELLE ALGRE, GILLES GAUDIN, AHMAD BSIESY, JEAN-PIERRE NOZIERES, SPINTEC CEA Grenoble — The superparamagnetic limit prevents the increase of areal density of informations in HDD storage systems. One way to overcome this limitation is to use very high coercive materials with heat assisted recording (HAMR). The major challenge lies in the spatial localization of heat, which needs to be of the order of the bit cell size for appropriate SNR. In the light of a thermal modeling, we present a new media well suited for probe- based HAMR. It combines simultaneous use of low thermal conductivity nanoporous silicon and patterned media, the latter allowing both ultra-high storage densities and a quasi perfect lateral (e.g. inter bits) thermal insulation. We show promising experimental results on the media developpment, as well as the first writing tests..

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