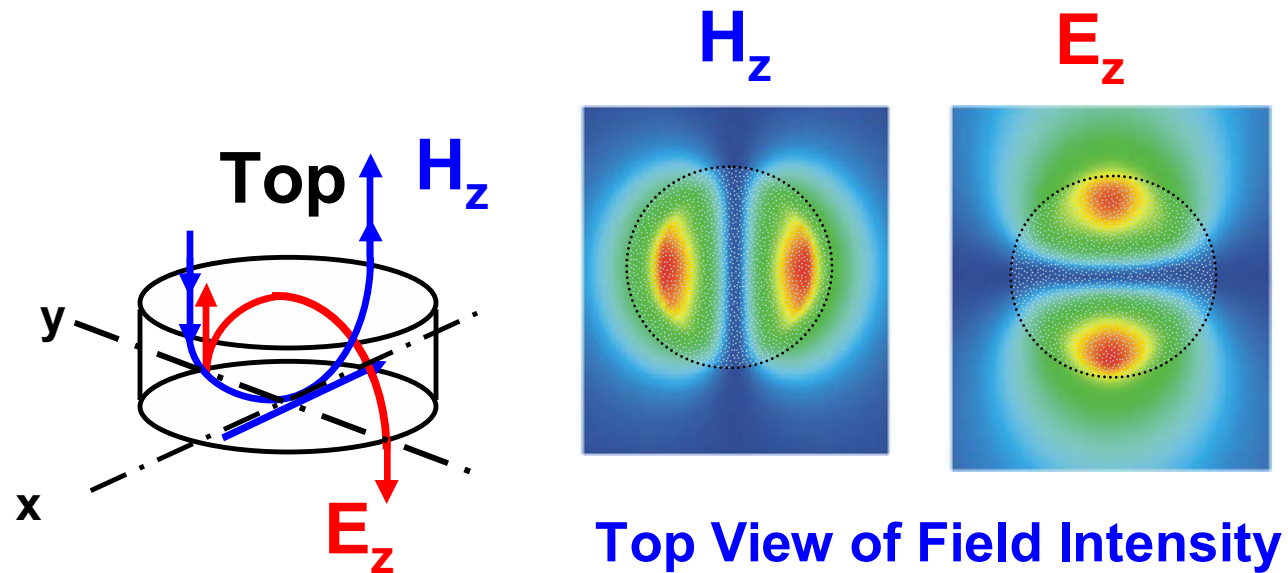
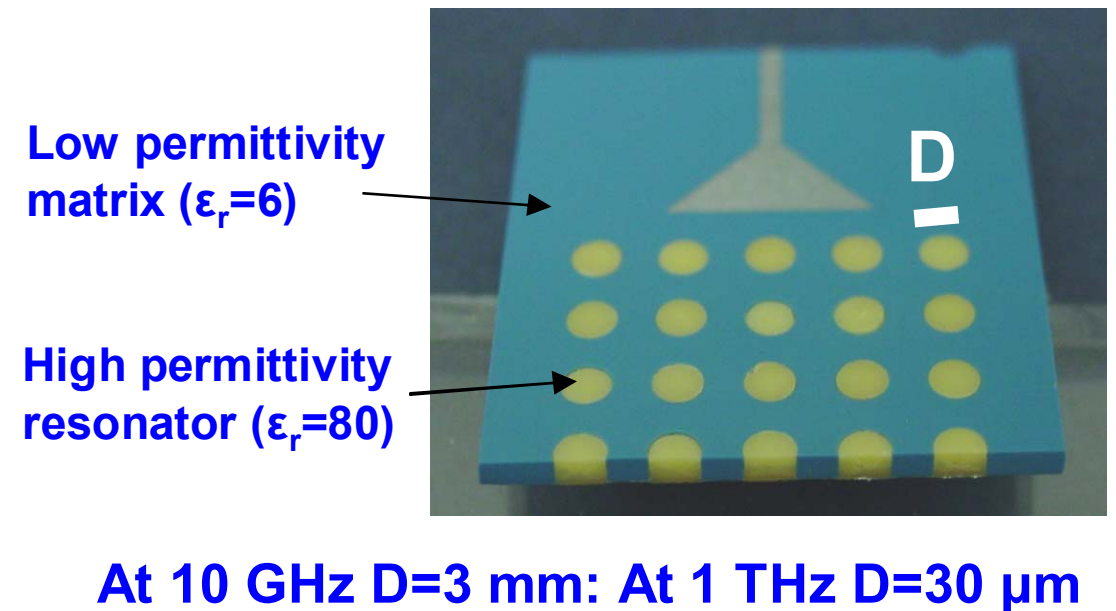


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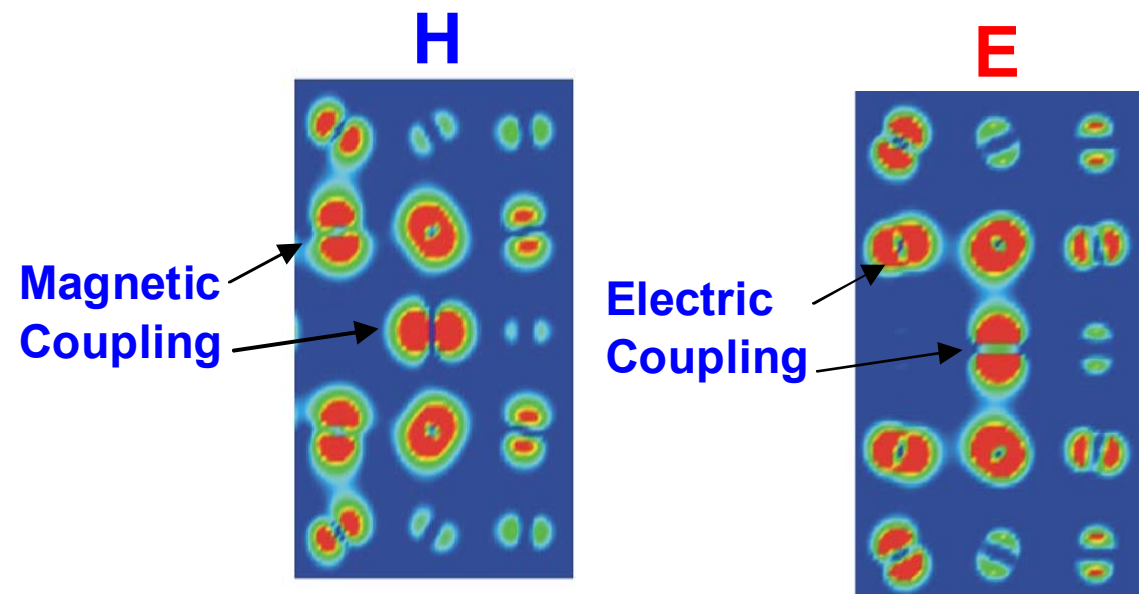
Unlike photonic band gap concepts, metamaterials originate with a single resonator



Resonators array prototypes fabricated by low temperature co-fired ceramic (LTCC) technology



Coupling between resonators depends on mode and lattice symmetries and will affect electromagnetic wave propagation



Meta-materials exhibit unusual optical behavior such as negative index of refraction

