Metamaterial-based Antennas

(7 March 2014)

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Metamaterials are artificially structured media with properties not commonly found in nature. Metamaterials are actively studied at microwave frequencies where they have led to the emergence of a new class of antennas and microwave devices. In the seminar, the speakers will present high directivity antennas achieved using the Fabry-Perot cavity concept and metasurfaces. Planar and conformal antennas as well as frequency agile and beam steerable antennas will be addressed [1-3]. The speakers will also talk about gradient index metamaterials for their use in low-profile 2D lens-antennas working on a wide frequency range [4-5].

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2. D. Germain, D. Seetharamdoo, S. N. Burokur, A. de Lustrac. Thin conformal directive Fabry-Pérot cavity antenna, IEEE Antennas and Wireless Propagation Letters, vol. 12, pp. 926-929, 2013.
3. A. Ghasemi, S. N. Burokur, A. Dhouibi, A. de Lustrac. High beam steering in Fabry-Pérot leaky-wave antennas, IEEE Antennas and Wireless Propagation Letters, vol. 12, pp. 261-264, 2013.
4. A. Dhouibi, S. N. Burokur, A. de Lustrac, A. Priou. Low-profile substrate-integrated lens antenna using metamaterials, IEEE Antennas and Wireless Propagation Letters, vol. 12, pp. 43-46, 2013.
5. A. Dhouibi, S. N. Burokur, A. de Lustrac, A. Priou. Compact metamaterial-based substrate-integrated luneburg lens antenna, IEEE Antennas and Wireless Propagation Letters, vol. 11, pp. 1504-1507, 2012.