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■ 研究分野	■ 研究分野キーワード
電磁波工学	マイクロ波磁性体デバイス、人工磁性体、 メタマテリアル、アンテナ、非可逆素子，発振回路，マイクロ波フィルタ

■ 研究テーマ

(1)人工ジャイロ磁気・誘電特性の創出とその電磁波素子への応用、(2)磁性体応用のマイクロ波デバイス、ビーム走査アンテナ
構造の研究 (3)Arduino制御の低コストマイクロ波測定器の開発

■ 文献

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■ 特許等

1. "ARTIFICIAL MAGNETIC MATERIAL, ARTIFICIAL MAGNETIC DEVICE, ARTIFICIAL MAGNETIC MATERIAL REFLECTING WALL AND ARTIFICIAL MAGNETIC MATERIAL," T. Kodera, C. Caloz, D. L. Sounas, PCT/CA2011/001422, 2012.
14. "人工磁性体、人工磁性体デバイス、人工磁性反射壁および人工磁性透過体," 小寺敏郎，クリストフ・キャロ，ドミトリアス・スナス，特願2011-147044,2011.その他4件

■解説・総説

なし

■著書

なし

■招待講演

1.″Tunable Magnetless Non-reciprocal Metamaterials and their Application to Circulators,″ META’14, the 5th International Conference on Metamaterials, Photonic Crystals and Plasmonics, May 2014.
2.″Ferrite antenna structures: Principle, Applications,and Innovations,″ IEEE MTT-S Int. Microw. Symp. (IMS2014), WFB-1, June 2014.
3. ″Magnet-less Non-reciprocal Metamaterials,″ in Proc. of Progress Electromagnetics Research Symp. (PIERS 2013) , T. Kodera, D. L. Sounas, C. Caloz, 3-pages (CD-ROM), 2013.
4. ″Magnet-less non-reciprocal metamaterials with magnetic or electric gyrotropy,″ in Proc. of URSI Int. Symp. on Electromagnetic Theory (EMTS 2013) , T. Kodera, D. L. Sounas, C. Caloz, 3-pages (CD-ROM), 2013.
5. ″PEMC metamaterial surface whose gyrotropy is provided by traveling-wave ring resonators,″ in Proc. of International Symposium of Antennas and Propagation (ISAP 2011), T. Kodera, D. L. Sounas, C. Caloz, 4-pages, 2011.
6. ″Field displacement in a traveling-wave ring resonator meta-structure,″ in Proc. of URSI General Assembly and Scienti c Symposium (URSI-GASS 2011), T. Kodera, D. L. Sounas, H. Nguyen, H. Razarvipour, C. Caloz, 4-pages, 2011.
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■主な研究設備等

(1)* 50 GHz 2ポートベクトルネットワークアナライザ (Agilent)
(2)* 20 GHz 4ポートベクトルネットワークアナライザ (Advantest)
(3) 20 GHz 2ポートベクトルネットワークアナライザ(Anritsu)
(4) 22 GHz スペクトラムアナライザ(Agilent)
(5) 8 GHz スペクトラムアナライザ(Advantest)
(6) NF評価用マイクロ波ノイズソース(noisecom)
(6) 50 MHz-26.5 GHz 信号発生器(Wiltron)
(7) 10 MHz-8 GHz 信号発生器(Agilent)
(8) 50-3 GHz ベクトル信号発生器(Anritsu)
(9) パルスパターンジェネレーター(Advantest)
(10)マイクロ波パワーメーター(Anritsu)
(11)VCOアナライザ(Agilent)
(12)** 電波暗箱を含む放射パターン測定装置(マイクロウェーブファクトリー)
(13)マイクロ波基板加工機(MITS)
(14)* 3Dプリンター(3D Systems Cube-X)
*:2014年度導入、**:2015年度導入