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Biography

Sang-Seok Lee received his B.S. and M.S. degrees in Physics from Kyungpook National University, South Korea in 1988 and 1990, respectively. In 1998, he obtained his Ph.D. degree from Tohoku University, Japan. After that he had studied on IC device simulation field as a postdoctorate fellow in the Venture Business Laboratory of Tohoku University until the end of 1999. Between 2000 and 2001, he had worked as a research fellow at the Laboratory of Electronic Instrumentation of the Delft University of Technology in the Netherlands and was involved in the research on MEMS device design and simulation. From 2002 to Sep. 2011, he had worked in Advanced Technology R&D Center of Mitsubishi Electric Corporation as a research scientist, and contributed to the development of RFMEMS, microfluidic and sensor devices. Since Oct. 2011, he has been a Professor in Graduate School of Engineering at Tottori University, Japan. His research interest focuses on RFMEMS, microfluidic devices, MEMS based sensors, metamaterials and PowerMEMS.

An Inkjet Printed Stacked Split-Ring Resonators

In order to easily achieve multi-resonant metamaterials with a stacked structure, we have proposed a simple fabrication method. In this presentation, we demonstrate the simple fabrication method and fabrication results of the multi-resonant metamaterials. In the fabrication, a silver nanoparticle inkjet printing technique was applied, which enables us to achieve a simple and low cost metamaterials. Moreover, our multi-resonant metamaterials have been achieved on a paper substrate.

We designed split-ring resonator (SRR) arrays as the metamaterials in THz region, which have different resonant frequencies. The resonant frequencies of the fabricated SRRs are evaluated by using THz time-domain spectroscopy (TDS).

As a result, we have achieved good agreement between the simulated and the measured values for *x*- and *y*-polarized incident waves. Furthermore, we could successfully obtain the multi-resonant frequencies for *x*-polarized incident wave. We also discuss the influence of misalignment between SRR arrays on the resonant frequencies.

Finally, we also introduce recent research results regarding metasurfaces consisted of complementary metal checkerboard patterns.