

data from the site accountability scales. The integration of this information into the tracking data provided insight into the advantages and challenges of using RFID at an operating nuclear facility. The RFID system survivability of the tags and reader equipment in the process environment. This paper will provide the operator perspective on utilizing RFID technology for locating cylinders within the facility, thereby tracking the cylinders for process and for Material Control & Accounting functions. The paper also will present the operator viewpoint on RFID implemented as an independent safeguards system. less

382. Reduced size dual band pass filters for RFID applications with excellent bandpass/bandstop characteristics

[NASA Astrophysics Data System \(ADS\)](#)

Abdalla, M. A.; Choudhary, D. Kumar; Chaudhary, R. Kumar

2018-02-01

This paper presents the design of two reduced size dual-band metamaterial bandpass filters and its simulation followed by measurements of proposed filters. These filters are supporting different frequency bands and primarily could be utilize in radio frequency identification (RFID) application. The filter includes three cells in which two are symmetrical and both inductively coupled with the third cell which is present in between them. In the proposed designs, three different metamaterial composite right/left handed (CRLH) cell resonators have been analysed for compactness. The CRLH cell consists of an interdigital capacitor, a stub/meander line/spiral inductor and a via to connect the top of the structure and ground plane. Finally, the proposed dual band bandpass filters (using meander line and spiral inductor) are showing size reduction by 65% and 50% (with 25% operating frequency reduction), respectively, in comparison with reference filter using stub inductor. More than 30 dB attenuation has been achieved between the two passbands.

383. Multi-scale Modeling and Analysis of Nano-RFID Systems on HPC Setup

[NASA Astrophysics Data System \(ADS\)](#)

Pathak, Rohit; **Joshi, Satyadhar**

In this paper we have worked out on some the complex modeling aspects such as Multi Scale modeling, MATLAB Sugar based modeling and have shown the complexities involved in the analysis of Nano RFID (Radio Frequency Identification) systems. We have shown the modeling and simulation and demonstrated some novel ideas and library development for Nano RFID. Multi scale modeling plays a very important role in nanotech enabled devices properties of which cannot be explained sometimes by abstraction level theories. Reliability and packaging still remains one the major hindrances in practical implementation of Nano RFID based devices. And to work on them modeling and simulation will play a very important role. CNTs is the future low power material that will replace CMOS and its integration with CMOS, MEMS circuitry will play an important role in realizing the true power in Nano RFID systems. RFID based on innovations in nanotechnology has been shown. MEMS modeling of Antenna, sensors and its integration in the circuitry has been shown. Thus incorporating this we can design a Nano-RFID which can be used in areas like human implantation and complex banking applications. We have proposed modeling of RFID using the concept of multi scale modeling to accurately predict its properties. Also we give the modeling of MEMS devices that are proposed recently that can see possible application in RFID. We have also covered the applications and the advantages of Nano RFID in various areas. RF MEMS has been matured and its devices are being successfully commercialized but taking it to limits of nano domains and integration with singly chip RFID needs a novel approach which is being proposed. We have modeled MEMS based transponder and shown the distribution for multi scale modeling for Nano RFID.

384. Factors affecting RFID adoption in the agricultural product distribution industry: empirical evidence from China.

[PubMed](#)

Shi, Ping; Yan, Bo

2016-01-01

We conducted an exploratory investigation of factors influencing the adoption of radio frequency identification (RFID) methods in the agricultural product distribution industry. Through a literature review and field research, and based on the technology-organization-environment (TOE) theoretical framework, this paper analyzes factors influencing RFID adoption in the agricultural product distribution industry in reference to three contexts: technological, organizational, and environmental contexts. An empirical analysis of the TOE framework was conducted by applying structural equation modeling based on actual data from a questionnaire survey on the agricultural product distribution industry in China. The