

# **Radio and Antenna Days of the Indian Ocean**

**(RADIO 2012)**

**IOP Conference Series: Materials Science and Engineering  
Volume 44**

**Flic-en-Flac, Mauritius  
24 - 27 September 2012**

**Editors:**

**Vikass Monebhurrin**

**Dominique Lesselier**

**ISBN: 978-1-63439-855-8  
ISSN: 1757-8981**

**Printed from e-media with permission by:**

Curran Associates, Inc.  
57 Morehouse Lane  
Red Hook, NY 12571



**Some format issues inherent in the e-media version may also appear in this print version.**

Copyright© by the Institute of Physics  
All rights reserved.

Printed by Curran Associates, Inc. (2015)

For permission requests, please contact the Institute of Physics  
at the address below.

Institute of Physics  
Dirac House, Temple Back  
Bristol BS1 6BE UK

Phone: 44 1 17 929 7481  
Fax: 44 1 17 920 0979

[techtracking@iop.org](mailto:techtracking@iop.org)

**Additional copies of this publication are available from:**

Curran Associates, Inc.  
57 Morehouse Lane  
Red Hook, NY 12571 USA  
Phone: 845-758-0400  
Fax: 845-758-2634  
Email: [curran@proceedings.com](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)

# Table of contents

## Volume 44

Radio and Antenna Days of the Indian Ocean (RADIO 2012)  
24–27 September 2012, Mauritius

Accepted papers received: 5 February 2013  
Published online: 23 April 2013

011001

[Radio and Antenna Days of the Indian Ocean \(RADIO 2012\)](#) Vikass Monebhurrin and  
Dominique Lesselier

### Papers

012001

[Automotive hexband antenna for AM/FM/GPS/SDARS and AMPS/PCS1900 cell phone  
in an only 65 mm high housing](#) J Kammerer, L Reiter and S Lindenmeier pg. 1

012002

[Design and analysis of inverted H shape dual band patch antenna for microwave  
application](#) M H Ullah, M T Islam, J S Mandeep, N Misran and M B I Reaz pg. 5

012003

[Design and development of a small compact ultra wideband antenna](#) Qurratulain and N  
Chattoraj pg. 9

012004

[Circular antenna array pattern analysis using radial basis function neural network](#) B R S Reddy, D Vakula and N V S N Sarma pg. 13

012005

[Koch fractal boundary patch over reactive impedance](#) V Reddy V and N V S N Sarma pg. 17

012006

[Numerical simulations of microwave heating of liquids: enhancements using Krylov subspace methods](#) M R Lollchund, K Dookhitram, M S Sunhaloo and R Boojhawon pg. 21

012007

[Influence as a challenger to induction for near-field wireless power transfer](#) H Bondar, S Oree and K Ichikawa pg. 25

012008

[Experimental study of rectenna coupling at low power level](#) A Douyère, F Alicalapa, S Rivière and J-D Lan Sun Luk pg. 29

012009

[The minimization of the extraneous electromagnetic fields of an inductive power transfer system](#) J McLean and R Sutton pg. 33

012010

[Electromagnetic modeling and definition of antenna specifications and positions for radio system deployment in confined environments](#) J A Castiblanco, D Seetharamdoo, M Berbineau, M Ney and F Gallee pg. 37

012011

[Analysis of a subwavelength Z-shaped metamaterial](#) A Dhouibi, S N Burokur, A de Lustrac and A Priou pg. 41

012012

[New trends in antenna design: transformation optics approach](#) P H Tichit, S N Burokur and A de Lustrac pg. 45

012013

[Metamaterial-based Fabry-Pérot leaky wave antennas: low profile, high directivity, frequency agility and beam steering](#) S N Burokur and A de Lustrac pg. 49

012014

[Electromagnetic waves reflectance from TbMnO<sub>3</sub> with sinusoidal antiferromagnetic structure](#) I V Bychkov, D A Kuzmin, S J Lamekhov and V G Shavrov pg. 53

012015

[Accurate measurement of RF exposure from emerging wireless communication systems](#) T Letertre, V Monebhurrin and Z Toffano pg. 57

012016

[Output power distributions of mobile radio base stations based on network measurements](#) D Colombi, B Thors, T Persson, N Wirén, L-E Larsson and C Törnevik pg. 61

012017

[Hand effect on head specific absorption rate \(SAR\) exposed by two realistic phone models](#) J Keshvari and M Kivento pg. 65

012018

[SAROTA: application of specific absorption rate \(SAR\) and over-the-air \(OTA\) data for the characterization of the real-life exposure due to mobile phones](#) V Monebhurrin pg. 69

012019

[GALFACTS: The galactic ALFA continuum transit survey](#) A R Taylor pg. 73

012020

[Expanding radio astronomy in Africa](#) M J Gaylard pg. 77

012021

[Engineering processes for the African VLBI network](#) V L Thondikulam, A Loots and M Gaylard pg. 81

012022

[The five-hundred-meter aperture spherical radio telescope \(FAST\) project](#) R Nan and D Li pg. 85

012023

[Wideband feeds for the upgraded GMRT](#) H R Bandari, G Sankarasubramanian and A P Kumar pg.. 89

012024

[Next generation digital backends for the GMRT](#) B Ajithkumar, S C Choudhari, K D Buch, M V Muley, G J Shelton, S H Reddy, S Kudale, J Roy and Y Gupta pg. 93

012025

[Front-end electronics for the upgraded GMRT](#) A N Raut, V Bhalerao and A P Kumar pg. 97

012026

[Developments of next generation monitor and control systems for radio telescopes](#) J Kodilkar, R Uprade, S Nayak, Y Wadadekar, J Chengalur and Y Gupta pg. 101

012027

[Astrophysical results of the Mauritius radio telescope](#) R Somanah, N Issur and N Oozeer pg. 105