Progress
In
Electromagnetics
Research
Progress
In
Electromagnetics
Research

Chief Editors: Weng Cho Chew and Sailing He
# CONTENTS

**Shielding of an Imperfect Metallic Thin Circular Disk: Exact and Low-Frequency Analytical Solution**  
Giampiero Lovat, Paolo Burghignoli, Rodolfo Araneo, Salvatore Celozzi, Amedeo Andreotti  
Dario Assante and Luigi Verolino .......................................................... 1

**Generating Picosecond Pulses with the Largest Number of Lasing Wavelengths by an All-Fiber Optical Parametric Oscillator**  
Xiaogang Jiang, Feihong Chen, Yi Lu, Taoce Yin, and Sailing He ................. 11

**Multi-Objective Genetic Algorithm Optimization of Frequency Selective Metasurfaces to Engineer Ku-Passband Filter Responses**  
Kenneth W. Allen, Daniel J. P. Dykes, David R. Reid, and Richard T. Lee ........ 19

**One-Antenna Radiation Pattern Measurement of On-Wafer Antennas in Probe Station Environment**  
Jianfang Zheng, Juha Ala-Laurinaho, Zachary D. Taylor, and Antti V. Rääsänen .... 31

**Self-dual Boundary Conditions in Electromagnetics**  
Ismo V. Lindell and Ari Sihvola ............................................................. 41

**Design and Fabrication of a Sectoral Beam Slotted Antenna in SIW Technology for Surveillance Applications at Millimeter Waves**  
Santi Concetto Pavone and Matteo Albani ................................................ 55

**A Review of Deep Learning Approaches for Inverse Scattering Problems**  
Xudong Chen, Zhun Wei, Maokun Li, and Paolo Rocca .................................. 67

**Shark-Fin Antenna for Railway Communications in LTE-R, LTE, and Lower 5G Frequency Bands**  
Ashwini K. Arya, Seongjin Kim, Sungik Park, Donghoon Kim, Rehab S. Hassan  
Kyeongjun Ko and Sanghoek Kim ............................................................. 83

**Investigation of New Sectored Hemispherical Dielectric Resonator Antennas Operating at $TM_{101}$ and $TE_{111}$ Mode for Circular Polarization**  
Rakesh Chowdhury and Raghvendra K. Chaudhary ....................................... 95

**A Combined Active and Passive Method for the Remote Sensing of Ice Sheet Temperature Profiles**  
Haokui Xu, Leung Tsang, Joel T. Johnson, Kenneth C. Jezek, Stephen J. Yan  
and Prasad Gogineni ................................................................. 111