

2020 IEEE Topical Conference on RF/Microwave Power Amplifiers for Radio and Wireless Applications (PAWR 2020)

**San Antonio, Texas, USA
26-29 January 2020**



**IEEE Catalog Number: CFP20PAR-POD
ISBN: 978-1-7281-3359-1**

**Copyright © 2020 by the Institute of Electrical and Electronics Engineers, Inc.
All Rights Reserved**

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

****** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP20PAR-POD
ISBN (Print-On-Demand):	978-1-7281-3359-1
ISBN (Online):	978-1-7281-3358-4

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) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

CURRAN ASSOCIATES INC.
proceedings
.com

TABLE OF CONTENTS

Session Mo1D: RF PA Technology and Devices

Mo1D-1	
Linearization Considerations for 5G Millimeter-Wave Power Amplifiers (Invited, Presentation only) (NA)	
<i>Peter Asbeck, Bagher Rabet, Sravya Alluri, Narek Rostomyan, Jefy Jayamon</i>	
Mo1D-2	
An X-Band Sampled-Line Impedance Sensor in 250-nm GaAs	1
<i>D.T. Donahue, M. Roberg, Z. Popovic, Taylor W. Barton</i>	
Mo1D-3	
Source/Load-Pull Characterisation of GaN on Si HEMTs with Data Analysis Targeting Doherty Design	5
<i>Roberto Quaglia, Anna Piacibello, Ferdinando Costanzo, R. Giofrè, Michael Casbon, Remy Leblanc, Vaclav Valenta, Vittorio Camarchia</i>	

Session Mo2D: PA Modeling and System Analysis

Mo2D-1	
Simulation Technique for Thermal Resistance in CMOS-SOI Power Amplifier Integrated Circuits	9
<i>Sravya Alluri, Jefy Jayamon, Bassel Hanafi, Peter Asbeck</i>	
Mo2D-2	
The Thermal Memory Effect Reduction of 5G Base Station Power Amplifier Using Multilevel Pulse Modulation	12
<i>Tzu-Han Wang, Yu-Ting Lin, Shuo-Heng Xu, You-Huei Chen, Jau-Horng Chen</i>	
Mo2D-3	
Amplifier Input Matching for NF-Gain-Linearity Compromise	15
<i>William Sear, Adam Der, Taylor W. Barton</i>	
Mo2D-4	
On the Power Level Dependence of PA and DPD Volterra Models	18
<i>Carlos Crespo-Cadenas, María J. Madero-Ayora, Juan A. Becerra</i>	
Mo2D-5	
Decomposed Vector Rotation Model Sizing by Hill-Climbing Heuristic for Digital Predistortion of RF Power Amplifiers	22
<i>Chouaib Kantana, Olivier Venard, Geneviève Baudoin</i>	

Session Mo3D: High Efficiency RF PAs

Mo3D-1	
Wideband and Efficient Power Amplifiers — The Distributed Efficient Power Amplifier (DEPA) (Invited, Presentation only)	(NA)
<i>David Gustafsson</i>	
Mo3D-2	
Optimal Two-Way Hybrid Doherty-Outphasing Power Amplifier	26
<i>Chenyu Liang, Thaimí Niubó-Alemán, Yunsik Hahn, Patrick Roblin, J.A. Reynoso-Hernández</i>	
Mo3D-3	
A 12GHz to 46GHz Fully Integrated SiGe Distributed Power Amplifier with 20.9dBm Output Power and 18.3dB Gain	30
<i>Songhui Li, Manu Viswambharan Thayyil, Corrado Carta, Frank Ellinger</i>	

Mo3D-4

Adaptive Input-Power Distribution in Doherty Power Amplifier Using Modified Wilkinson Power Divider 34
Shuichi Sakata, Yuji Komatsuzaki, Shintaro Shinjo

Session Mo4D : Distortion Reduction Techniques in RF PAs

Mo4D-1

A Perspective on Linearization and Digital Pre-Distortion for Wireless Radio Systems (Invited)..... 38
Kevin Chuang

Mo4D-2

Digital Predistortion of a RF Power Amplifier Using a Remote Closed Loop Estimator 42
R. Neil Braithwaite

Mo4D-3

Design and Digital Predistortion Linearization of a Wideband Outphasing Amplifier Supporting 200MHz Bandwidth..... 46
Pere L. Gilabert, David Vegas, Zhixiong Ren, Gabriel Montoro, José R. Pérez-Cisneros, M. Nieves Ruiz, Xiaoshu Si, José A. García

Mo4D-4

Determining a Digital Predistorter Model Structure for Wideband Power Amplifiers Through Random Forest..... 50
Luis Álvarez-López, Juan A. Becerra, María J. Madero-Ayora, Carlos Crespo-Cadenas