2012 IEEE Avionics, Fiber- Optics and Photonics Technology Conference

(AVFOP 2012)

Cocoa Beach, Florida, USA 11-13 September 2012



IEEE Catalog Number: ISBN: CFP12AVF-PRT 978-1-4577-0757-5

TABLE OF CONTENTS

Tuesday, September 11, 2012

TuA TuA1	AVFOP Conference Overview SAE Standards for WDM LAN: Optical Network Architecture, Access, Control and Physical Layer Standards […] %
TuA2	Recent Progress on Optical Modules for RF Signal Remoting and Distribution in Airborne Environment
TuA3	Electro-Optic Devices in Thin Film Lithium Niobate (TFLN™)``)
TuA4	Tunable Frequency Combs for Photonic Applications +
TuA5	Photogrammetric Verification of Fiber Optic Shape Sensors on Flexible Aerospace Structures
TuA6	Phase Change Materials for Passive Cooling of Active Optical Components 3%
TuB TuB1	Avionics Networking Architecture, Modeling and Standardization Wavelength-Efficient Network Architectures for Avionic WDM LANs ¹¹ %
TuB2	Fiber Optic AFDX for Flight Control Systems %
TuB3	Photonic Crystal WDM Cross-Connect with Reconfigurable OCDMA Functionality 7%,
TuB4	Millimeter-Wave, Multi-Access Wireless over Fiber Technologies and Applications &
TuC TuC1	RF Photonics: Links and Signal Processing Coherent Optical Signal Processing using Stabilized Optical Frequency Combs ^{••} &&
TuC2	Photonics for UWB Communications : &(
TuC3	Mixing Spur Reduction Through Photonic-Assisted Frequency Conversion **
TuC4	High Dynamic Range Suppressed-bias Microwave Photonic LinksUsing Unamplified Semiconductor Laser Source &,
TuC5	Highly Stable Optoelectronic Oscillator with a 105 Finesse Etalon as a Photonic Filter
TuD TuD1	Fiber Optic Transmitters/Receivers for Digital Avionics Networks BIT-Enabled VCSEL-Based Parallel Optic Transceivers ¹¹ &
TuD3	Fiber-Optic Transceivers for High-Speed Intra-Satellite Links $\overset{\dots}{}$ (
TuD4	Tunable Transceiver Technologies for Avionics Applications *** *

Wednesday, September 12, 2012

- WA Photonic Sub-Systems Demonstrations and Concepts
- WA1 AF/AFRL Perspective on RF Photonics '' ,
- WA2 High-Fidelity Microwave Photonic Filtering using Optical Frequency Combs^{••} (\$
- WA3 High Resolution, Chirped Pulse Lidar with Spectral Phase Modulation for Two Fold Improvement in Range Resolution⁽⁾ (&

WA4 K-to-W-band Phased Array Antenna Technology"((

WB Photonic Integration

- WB1 Single-Chip Photonic Integration with CMOS for Aerospace (*
- WB2 Pitch Reducing Optical Fiber Array for Dense Optical Interconnect⁽¹⁾
- WB3 Silicon Photonic Link in CMOS Quilt Package) \$
- WB4 Integrated Photonic Approaches for Suppression of Co-Site Interference and Jamming⁽¹⁾) &
- WB5 High Performance Silicon Multi-Ring Filters^{••}) (

WC Cable, Fiber, Connection and Device Solutions for Harsh Environments I

- WC1 Manufacturing Optically Connected Chips with Photonic PWB Assemblies) *
- WC2 Updates on Cleaning and Inspection Standards of a Fiber Optic Connection.),
- WC3 Detection Methods for Locating Obstructions in Blown Optical Fiber Ducts^{**}\$

WD RF Photonics: Device Technology

- WD1 High-Power, Compact Slab-Coupled Optical Waveguide (SCOW) Emitters and Their Applications ** &
- WD2 Low-Cost, Low-Noise Hybrid Lasers for High SFDR RF Photonic Links^{***} (
- WD3 High-Power and Low-Noise DFB Semiconductor Lasers for RF Photonic Links^{***}
- WD4 Low Noise Subpicosecond Pulse Generation from a 22 GHZ Alingaas Multiple Quantum Well Laser by Direct RF Modulation^{**},
- WD5 All-Diode Generation and Amplification of 10 GHZ Pulse-Trains from Coupled-Cavity Mode-Locked Lasers Using Slab-Coupled Waveguide Amplifiers⁺⁺*

Thursday, September 13, 2012

ThA Signal Transmission

ThA1 Transmission of Digital and Analogue Data on a Single Mode Fibre Optic Network for Aircraft^{··}+& ThA2 Signal Processing and Impairments in Next-Generation MMF Links"+(ThA3 Multiplying Bandwidth of Multi-Mode Optical Fibers Through Application of Spatial Domain Multiplexing +* ThA4 Scattering Effect on Link Range for a 10 GBPS Free Space Optical Communication System"+, ThA5 Transmission of Differential GPS Signals over Fiber for Aircraft Attitude Determination", \$ ThB Laser/Modulator/Nano Device Technology ThB1 Ultra-Efficient Nano-Photonic Devices using Hybrid Material Systems for Optical Communication and Sensing", & ThB2 nano-Engineered Metal Components for Photonics Applications (ThB3 CMOS Compatible Modulation of 1.5-micron Light using Silicon Nanocrystals", * ThB4 Optical and RF Stabilization of a Coupled Cavity Colliding Pulse Mode-Locked Laser via

Four-Wave Mixing", ,

ThB5 Measuring the Modulation Properties of Injection-Locked VCSELS Using Coherent Optical Demodulation⁻⁻ \$

ThC Cable, Fiber, Connection and Device Solutions for Harsh Environments II

- ThC2 Corning Bend Insensitive Optical Fibers for Elevated Temperature Applications &
- ThC3 Investigation of Connector End- Face Visual Requirements on Scratches for 40G NRZ Optical Link⁻⁻ (
- ThC4 An Embedded Condition Based Maintenance Approach for Avionic Fiber Network *
- ThC5 OTDR Testing Of Short-Length Multimode Optical Fiber ,
- ThC6 Optical Fiber Detection Modules Immunity to High-Power Interference with Photosensitive Electronics ** \$\$

ThD RF Photonics: Devices, Links & Signal Processing

- ThD1Multiheterodyne Detection for Self-Referenced Characterization of Complex Arbitrary
Waveforms from Largely Detuned Optical Frequency Combs^{**}%\$&
- ThD2 Optical Filtering of RF Signals Through Contrasting Fiber Dispersion Slopes %(
- ThD3 Sud-Picosecond, Transform Limited Pulse Generation in Fiber CPA Systems Utilizing Spectral Pulse Shaping with Adaptive Feedback Loop^{**}%*
- ThD4 Specialty-Fiber Amplifier for a Mode-Locked Tm-Laser with Intracavity Dispersion Compensation^{**}%,
- ThD5 Injection-Locked Fabry-PÉrot Laser for True Linear Intensity Modulation "%%
- ThD6Measurement of the Spur-Free Dynamic Range of an Analog Link with a Semiconductor
Resonant Cavity Interferometric Linear Intensity Modulator %%&