

Yanne K. Chembo

| August 2019

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Department of Electrical and Computer Engineering
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Professional Preparation

University of Yaoundé I	Cameroon	Physics	B.Sc., 1997
Telecommunications School	Cameroon	Telecom Eng.	B.Sc., 2001
University of Yaoundé I	Cameroon	Physics	Ph.D.(*), 2005
University of the Balearic Islands	Spain	Photonics	Ph.D.(*), 2006
CNRS FEMTO-ST Institute	France	Photonics	Postdoc, 2007–2009
NASA/Caltech Jet Propulsion Lab	USA	Photonics	Postdoc, 2009–2010

(*)These two PhDs were undertaken independently and simultaneously

Appointments

- **Associate Professor**, Electrical and Computer Engineering, University of Maryland (since Jan. 2019)
- **Research Director**, Georgia Tech-CNRS Joint International Lab, Atlanta (Oct. 2018 – Dec. 2018)
- **Research Scientist**, Georgia Tech-CNRS Joint International Lab, Atlanta (Jan. 2017 – Sept. 2018)
- **Research Scientist**, CNRS FEMTO-ST Institute, Besançon, France (Feb. 2010 – Dec. 2016)

Publications

A total of 96 articles in international refereed journals (first, last or corresponding author for >80% of them);
Over 60 international refereed proceedings and 2 book chapters; Google h-index=36 with >3800 citations.

FIVE RELEVANT PUBLICATIONS MOST CLOSELY RELATED TO THE PROPOSED PROJECT:

- [1] **Optoelectronic oscillators with time-delayed feedback**
Y. K. Chembo, D. Brunner, M. Jacquot and L. Larger,
Rev. Mod. Phys, in press (2019). [55 pages]
- [2] **High-Speed Photonic Reservoir Computing Using a Time-Delay-Based Architecture: Million Words per Second Classification**
L. Larger, A. Baylon-Fuentes, R. Martinenghi, V. S. Udaltsov, Y. K. Chembo, and M. Jacquot,
Phys. Rev. X **7**, 011015 (2017). [14 pages]
Highlighted in Nature: "A faster brain-inspired computer", Nature 542, 394 (2017).
Highlighted in the APS Journal Physics: "Reservoir Computing Speeds Up", Physics 10, 12 (2017).
- [3] **Nonlinear phenomena in ultra-high Q optical whispering gallery mode resonators**
G. Lin, A. Coillet and Y. K. Chembo,
Adv. Opt. Phot. **9**, 828 (2017). [63 pages]
- [4] **Optimally Coherent Kerr Combs Generated with Crystalline Whispering Gallery Mode Resonators for Ultrahigh Capacity Fiber Communications**
J. Pfeifle, A. Coillet, R. Henriët, K. Saleh, P. Schindler, C. Weimann, W. Freude,
I. V. Balakireva, L. Larger, C. Koos, and Y. K. Chembo,
Phys. Rev. Lett. **114**, 093902 (2015) [5 pages]

- [5] **Photonic Nonlinear Transient Computing with Multiple-Delay Wavelength Dynamics**, R. Martinenghi, S. Rybalko, M. Jacquot, Y. K Chembo, and L. Larger, Phys. Rev. Lett. **108**, 244101 (2012). [4 pages]

This article has been highlighted in Nature Photonics: "Photonic computing: Mimicking the brain", S. Armstrong, Nat. Phot. 6, 573 (2012). It has also been highlighted in Optics & Photonics Focus: "Photonics brains", G. Volpe, Opt. Phot. Focus 18 (2012).

FIVE OTHER SIGNIFICANT PUBLICATIONS:

- [1] **Micro-Combs: a Novel Generation of Optical Sources**
A. Pasquazi, M. Peccianti, L. Razzari, D. J. Moss, S. Coen, M. Erkintalo, Y. K. Chembo, T. Hansson, S. Wabnitz, P. Del'Haye, X. Xue, A. M. Weiner, and R. Morandotti, Phys. Rep. **729**, 1 (2018). [81 pages]
- [2] **Spatiotemporal Lugiato-Lefever formalism for Kerr-comb generation in whispering-gallery mode resonators**,
Y. K. Chembo and C. R. Menyuk
Physical Review A **87**, 053852 (2013). [4 pages]
Flagged as "Highly cited paper (top 1% in area)" in ISI Web of Knowledge.
- [3] **Spectrum and dynamics of optical frequency combs generated with whispering gallery mode resonators**
Y. K. Chembo, D. V. Strekalov and N. Yu,
Phys. Rev. Lett. **104**, 103902 (2010). [4 pages]
- [4] **A Modal Expansion Approach to Optical Frequency Combs Generation with Monolithic Whispering Gallery Mode Resonators**
Y. K. Chembo and N. Yu,
Phys. Rev. A **82**, 033801 (2010). [18 pages]
This article has been highlighted in a Viewpoint of the APS journal Physics: "Tiny resonators generate a large optical spectrum", Physics 3, 75 (2010).
- [5] **Chaotic breathers in delayed electro-optical systems**
Y. K Chembo, P. Colet, L. Larger and N. Gastaud
Phys. Rev. Lett. **95**, 203903 (2005). [4 pages]

Synergistic Activities

- **Photonics for Aerospace and Communication Engineering Systems:** European Research Council (ERC) Grantee 2011 (most competitive and prestigious grant in Europe, budget: ~2M\$); Contractor for CNES (French Space Agency, 2011-2015); NASA Invention and Contribution Board Award (2013).
- **Scientific committee member for international conferences:** SPIE Photonics West in San Francisco (2012–2020); SPIE Photonics Europe in Brussels (2018); OSA Latin America Optics & Photonics Conference in Lima, Peru (2018); and CLEO Pacific Rim in Hong-Kong (2018).
- **Community:** Associate Editor for the OSA Journal Optics Express (2016-), Reviewer for >70 international refereed journals, Guest Editor for NOLTA (2012), Guest Editor for EPJD (2017), Member of the International Commission of Optics (ICO) steering committee for Regional Development (2015-2017), Associate Vice-President for Outreach for the IEEE Photonics Society Membership Council (2016-).
- **International Year of Light 2015 (IYL) and International Day of Light (IDL):** Member of the five-person delegation that proposed IYL 2015 to the United Nations HQ in New-York (2013); Member of the delegation that advocated for an IDL every may 16th at the UNESCO HQ in Paris (2016).
- **Professional societies:** OSA Senior Member; IEEE Senior Member; SPIE Fellow.