

Georgios C. Trichopoulos

Assistant Professor

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Education

PhD in Electrical and Computer Engineering (2008 - May 2013)

The Ohio State University, ElectroScience Laboratory, Columbus, OH

MSc in Biomedical Engineering (2004-07).

Medical School, University of Patras & School of Electrical and Computer Engineering, National Technical University of Athens, Greece

Dipl.-Ing. in Electrical and Computer Engineering (1999-2004)

Democritus University of Thrace, Xanthi, Greece

Awards

- **IEEE Antennas and Propagation Symposium Student Paper Competition Finalist (2014)**
- **Inspiration Award (2014)** – ElectronicProducts.com (technology portal)
- **1st place in IEEE Antennas and Propagation Symposium Student Paper Competition (2013)** - best paper among 400 papers submitted in the Student Paper Competition.
- **Travel Award (2011,2013)** – attend the 2013 National Radio Science Meeting (Boulder, CO)
- **Student Innovator of the Year (2013)** - Finalist, The Ohio State University
- **3rd place in Student Poster Competition (2012)** - 6th Annual John D. and Alice Nelson Kraus Memorial Student Poster Competition, The Ohio State University, Columbus, OH USA.

Research Interests

- Antennas for millimeter wave (mmW) and sub-mmW sensors and imaging systems
- Medical imaging and non-destructive evaluation
- Characterization and measurement methods of high-frequency integrated circuits (ICs)
- Sub-millimeter wave network analyzers

Patents

G. C. Trichopoulos, C. Caglayan, and K. Sertel, “Non-contact probe measurement test-bed for millimeter wave (mmW) and terahertz (THz) circuits, integrated devices/components, systems and for spectroscopy using sub-wavelength-size samples” (US 14/309,432)

G. C. Trichopoulos and P. Theofanopoulos, “Radio-frequency imaging sensors for advanced security fingerprint biometrics and mobile health” (Filed, June 2016)

Publication List

Selected Peer Reviewed Publications

1. Y. Karisan, C. Caglayan, **G. C. Trichopoulos**, and K. Sertel, "Lumped-Element Equivalent-Circuit Modeling of Millimeter-Wave HEMT Parasitics Through Full-Wave Electromagnetic Analysis," in *IEEE Transactions on Microwave Theory and Techniques*, vol. 64, no. 5, pp. 1419-1430, May 2016.
2. C. Caglayan, **G. C. Trichopoulos**, and K. Sertel, "Hybrid Electromagnetic Modeling of Lens-Integrated Antennas for Non-Contact On-Wafer Characterization of THz Devices and Integrated Circuits" *ACES Express Journal*, Vol. 1, No. 2, February, 2016.
3. **G. C. Trichopoulos** and K. Sertel, "Broadband terahertz computed tomography using a 5k-pixel real-time THz camera," *Journal of Infrared, Millimeter, and Terahertz Waves*, Volume 36, Issue 7, pp 675-686, July 2015.
4. C. Caglayan, **G. C. Trichopoulos**, and K. Sertel, "Non-contact probes for on-wafer characterization of THz devices and integrated circuits," *IEEE Trans. Microwave Theory Tech.*, vol. 62, no. 11, pp. 2791–2801, Nov 2014.
5. **G. C. Trichopoulos**, H.L. Mosbacker, D. Burdette, and K. Sertel, "A broadband focal plane array camera for real-time THz imaging applications," *IEEE Trans. Antennas and Propagation*, vol.61, no.4, pp.1733-1740, April 2013.
6. K. Topalli, **G. C. Trichopoulos**, and K. Sertel, "An indirect impedance characterization method for monolithic THz antennas using coplanar probe measurements," *IEEE Antennas and Wireless Propagation Letters*, vol.11, pp.3-5, 2012.
7. **G. C. Trichopoulos**, G. Mumcu, K. Sertel, L. H. Mosbacker, and P. Smith, "A novel approach for improving off-axis pixel performance of terahertz focal plane arrays," *IEEE Trans. Microwave Theory Tech.*, vol. 58, no. 7, pp. 2014–2021, Mar. 2010.

Selected Conference Publications

1. **G. C. Trichopoulos**, "Sub-millimeter wave low-profile imaging modules (SLIMs)," *2016 IEEE International Symposium on Antennas and Propagation (APSURSI)*, Fajardo, 2016, pp. 251-252.
2. Y. Karisan, C. Caglayan, **G. C. Trichopoulos**, and K. Sertel, "Lumped-element modeling of millimeter-wave HEMT parasitics via full-wave electromagnetic analysis," *37th IEEE Compound Semiconductor IC(CSIC) Symposium*, New Orleans, Louisiana, Oct 2015.
3. S. Saqueb, **G. C. Trichopoulos**, and K. Sertel, "A 4K pixel terahertz compressive sensing camera," *2015 IEEE International Symposium on Antennas and Propagation*, Vancouver, BC Canada, July, 2015.
4. C. Caglayan, **G. C. Trichopoulos**, and K. Sertel, "Wideband on-chip antennas for non-contact characterization of mmW and THz devices and integrated circuits," *2015 IEEE International Symposium on Antennas and Propagation*, Vancouver, BC Canada, July, 2015.
5. C. Caglayan, **G.C. Trichopoulos**, and K. Sertel, "Non-contact probes for device and integrated circuit characterization in the THz and mmW bands," *2014 IEEE International Microwave Symposium*, Tampa, FL USA, June 1-6 2014.
6. C. Caglayan, **G. C. Trichopoulos**, and K. Sertel, "Non-contact device and integrated circuit characterization in the G-band (140-220GHz)," *2014 IEEE International Symposium on Antennas and Propagation*, Memphis, TN USA, July 6-11, 2014 (**Finalist Paper, Top 14 out of 150 papers**).
7. C. Caglayan, **G. C. Trichopoulos**, and K. Sertel, "On-wafer device characterization with non-contact probes in the THz band," *USNC-URSI Radio Science Meeting (Joint with AP-S Symposium)*, TN USA, July 6-11, 2014.

8. C. A. Roedig, D. J. Burdette, J. J. Law, **G. C. Trichopoulos**, K. Sertel and Howard L. Mosbacker, " Initial results of a real-time, quad-frequency, polarization-sensitive THz line camera ", *Proc. SPIE 9102, Terahertz Physics, Devices, and Systems VIII: Advanced Applications in Industry and Defense*, 910205 (May 21, 2014).
9. **G. C. Trichopoulos** and K. Sertel, "Limited angle THz computed tomography for tissue imaging," *USNC/URSI National Radio Science Meeting*, Boulder, CO, Jan. 8–11, 2014.
10. **G. C. Trichopoulos** and K. Sertel, "Large format focal plane array for rapid THz computer tomography," *2013 IEEE International Symposium on Antennas and Propagation*, Orlando, FL USA, July 9-14, 2013 (**1st paper award**).
11. C. Caglayan, **G. C. Trichopoulos**, and K. Sertel, "Non-contact probe calibration for THz-frequency device characterization," *Microwave Measurement Conference, 2013 82nd ARFTG*, pp.1-2, 18-21 Nov. 2013.
12. **G. C. Trichopoulos**, C. Caglayan, and K. Sertel, "Hybrid electromagnetic modeling of non-contact probes for terahertz device characterization," *Computational Electromagnetics Workshop (CEM), 2013*, pp.52-53, 2-5 Aug. 2013
13. C. Caglayan, **G. C. Trichopoulos**, and K. Sertel, "On-wafer device characterization with non-contact probes in the THz band," *2013 IEEE Int. Symposium on Antennas and Propagation*, Orlando, FL USA, July 9-14, 2013.
14. **G. C. Trichopoulos** and K. Sertel, "Terahertz computed tomography using a large-format, real-time focal plane array sensor," *2013 US National Committee of URSI National Radio Science Meeting (USNC-URSI NRSM)*, Boulder, CO, 2013, pp. 1-1.
15. C. Caglayan, **G. C. Trichopoulos**, and K. Sertel, "Device characterization with non-contact probes in the THz band," *2013 US National Committee of URSI National Radio Science Meeting (USNC-URSI NRSM)*, Boulder, CO, 2013, pp. 1-1.
16. **G. C. Trichopoulos** and K. Sertel, "Hybrid electromagnetic modeling of terahertz focal plane array imaging sensors", *Applied Computational Electromagnetics Society Conference*, April 10-14, 2012, Columbus, OH USA.
17. D. Burdette, C. Roedig, J. Alverbro, P. Fay, K. Sertel, Y Ni, **G. C. Trichopoulos**, K. Topalli, and H. L. Mosbacker, "Recent experimental results of a large format 80×64 pixel THz camera sensitive to 0.6 - 1.2 THz radiation" in *Optical Sensors, Optical Society of America (OSA)*, Monterey, CA, June 25, 2012.
18. **G. C. Trichopoulos** and K. Sertel, "Quasi-optical imaging performance of THz focal plane array antennas," *2012 IEEE International Symposium on Antennas and Propagation*, Chicago, IL USA, July 9-14, 2012.
19. K. Topalli, **G. C. Trichopoulos**, and K. Sertel, "Non-contact probes for THz circuits and integrated devices," *2012 IEEE International Symposium on Antennas and Propagation*, Chicago, IL USA, July 9-14, 2012.
20. D. J. Burdette, J. Alverbro, Z. Zhang, P. Fay, Y. Ni, P. Potet, K. Sertel, **G. C. Trichopoulos**, K. Topalli, J. Volakis, and H. L. Mosbacker, "Development of an 80 x 64 pixel, broadband, real-time THz imager," *Proc. SPIE 8023, Terahertz Physics, Devices, and Systems V: Advance Applications in Industry and Defense*, 80230F (May 25, 2011).
21. **G. C. Trichopoulos** and K. Sertel, "Imaging performance of a THz focal plane array," *2011 IEEE International Symposium on Antennas and Propagation*, pp. 1882 – 1884, July 2011.
22. K. Topalli, **G. C. Trichopoulos**, and K. Sertel, "An indirect impedance characterization method for monolithic THz antennas," *2011 IEEE International Symposium on Antennas and Propagation*, pp.1882 – 1884, July 2011.
23. K. Topalli, **G.C. Trichopoulos**, and K. Sertel, "An indirect impedance characterization method for monolithic double-slot antennas for THz sensors," *General Assembly and Scientific Symposium, 2011 XXXth URSI*, pp.1,4, 13-20 Aug. 2011, Istanbul, Turkey.
24. **G. C. Trichopoulos**, K. Sertel, and J. L. Volakis, "Slot spiral detector array for broadband THz imaging," *2010 IEEE International Symposium on Antennas and Propagation*, Toronto, ON, Canada, Jul.11–17, 2010.

25. **G. C. Trichopoulos**, G. Mumcu, K. Sertel, L. H. Mosbacker, Y. Tang, Z. Zhang, P. Fay, and J. L. Volakis, "A focal plane array for high sensitivity direct detection of excised tissue characteristics," in *USNC/URSI National Radio Science Meeting Digest*, Charleston, SC, Jun. 1–5, 2009.
26. **G. C. Trichopoulos**, I.S. Karanasiou, and N.K. Uzunoglu, "Enhancing the focusing properties of an ellipsoidal beamformer based imaging system: a simulation study," *Engineering in Medicine and Biology Society, 2006. EMBS '06. 28th Annual International Conference of the IEEE*, pp.5097-5100, Aug. 30 2006-Sept. 3 2006.