



## Butrus Khuri-Yakub

Professor (Research) of Electrical Engineering, Emeritus

 Curriculum Vitae available Online

### Bio

---

#### BIO

Butrus (Pierre) T. Khuri-Yakub is a Professor of Electrical Engineering at Stanford University. He received the BS degree from the American University of Beirut, the MS degree from Dartmouth College, and the Ph.D. degree from Stanford University, all in electrical engineering. His current research interests include medical ultrasound imaging and therapy, ultrasound neuro-stimulation, chemical/biological sensors, gas flow and energy flow sensing, micromachined ultrasonic transducers, and ultrasonic fluid ejectors. He has authored over 600 publications and has been principal inventor or co-inventor of 107 US and international issued patents. He was awarded the Medal of the City of Bordeaux in 1983 for his contributions to Nondestructive Evaluation, the Distinguished Advisor Award of the School of Engineering at Stanford University in 1987, the Distinguished Lecturer Award of the IEEE UFFC society in 1999, a Stanford University Outstanding Inventor Award in 2004, Distinguished Alumnus Award of the School of Engineering of the American University of Beirut in 2005, Stanford Biodesign Certificate of Appreciation for commitment to educate, mentor and inspire Biodesign Fellows, 2011, and 2011 recipient of IEEE Rayleigh award.

#### ACADEMIC APPOINTMENTS

- Professor Emeritus, Electrical Engineering
- Member, Bio-X
- Member, Cardiovascular Institute
- Member, Stanford Cancer Institute
- Member, Wu Tsai Neurosciences Institute

#### HONORS AND AWARDS

- Rayleigh Award, IEEE (2011)
- Certificate of Appreciation for commitment to educate, mentor and inspire, Stanford Biodesign (2011)
- Distinguished Alumnus, American University of Beirut (2005)
- Outstanding Inventor, Stanford University (2004)
- Distinguished Lecturer, UFFC Group of IEEE (1999)
- Distinguished Engineering Advisor, Stanford University (1987)
- Award for Contributions to Nondestructive Testing, City of Bordeaux (1983)

#### PROGRAM AFFILIATIONS

- Stanford SystemX Alliance

#### PROFESSIONAL EDUCATION

- PhD, Stanford University (1975)

- MS, Dartmouth College (1972)
- BS, American University of Beirut (1970)

## LINKS

- <https://kyg.stanford.edu>: <https://kyg.stanford.edu>

## Teaching

---

### STANFORD ADVISEES

#### Postdoctoral Faculty Sponsor

Jeong Nyeon Kim

#### Doctoral Dissertation Advisor (AC)

Fareeha Safir, Junyi Wang

#### Doctoral (Program)

Rohan Doshi, William Meng, Alexander Toews, Benj Wollant

## Publications

---

### PUBLICATIONS

- **Multilayer Masking Technology for Fabricating Airborne CMUTs With Multi-Depth Fluidic Trenches** *JOURNAL OF MICROELECTROMECHANICAL SYSTEMS*  
Ma, B., Firouzi, K., Khuri-Yakub, B. T.  
2022
- **Applications of Capacitive Micromachined Ultrasonic Transducers: A Comprehensive Review** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*  
Joseph, J., Ma, B., Khuri-Yakub, B. T.  
2022; 69 (2): 456-467
- **Spike frequency-dependent inhibition and excitation of neural activity by high-frequency ultrasound.** *The Journal of general physiology*  
Prieto, M. L., Firouzi, K., Khuri-Yakub, B. T., Madison, D. V., Maduke, M.  
2020; 152 (11)
- **Toward rapid infectious disease diagnosis with advances in surface-enhanced Raman spectroscopy.** *The Journal of chemical physics*  
Tadesse, L. F., Safir, F., Ho, C., Hasbach, X., Khuri-Yakub, B. P., Jeffrey, S. S., Saleh, A. A., Dionne, J.  
2020; 152 (24): 240902
- **Wafer-scale Fabrication of Nanometer Silicon Posts for Capacitive Micromachined Ultrasonic Transducers with Substrate-Embedded Springs**  
Kim, H., Kang, D., Kim, J., Khuri-Yakub, B. T., Lee, B., IEEE  
IEEE.2020
- **Wide Bandwidth and Low Driving Voltage Vented CMUTs for Airborne Applications.** *IEEE transactions on ultrasonics, ferroelectrics, and frequency control*  
Ma, B., Firouzi, K., Brenner, K., Khuri-Yakub, B. T.  
2019; 66 (11): 1777-85
- **A Microwave-Induced Thermoacoustic Imaging System With Non-Contact Ultrasound Detection** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*  
Singhvi, A., Boyle, K. C., Fallahpour, M., Khuri-Yakub, B. T., Arbabian, A.  
2019; 66 (10): 1587-99
- **Advances in Capacitive Micromachined Ultrasonic Transducers.** *Micromachines*  
Brenner, K., Ergun, A. S., Firouzi, K., Rasmussen, M. F., Stedman, Q., Khuri-Yakub, B. P.  
2019; 10 (2)

- **Performance Parameters and Frequency Response of CMUTs in Transmit, Receive, and Pulse-Echo Operation**  
Wygant, I., Khuri-Yakub, B. T., Kupnik, M., IEEE  
IEEE.2019: 766–69
- **Multiphase GaN Class-D Resonant Amplifier for High-Intensity Focused Ultrasound**  
Gu, L., Stedman, Q., Rasmussen, M., Pai, C., Brenner, K., Ma, B., Ergun, A., Khuri-Yakub, B., Davila, J., IEEE  
IEEE.2019
- **Non-Contact Thermoacoustic Sensing and Characterization of Plant Root Traits**  
Singhvi, A., Ma, B., Scharwies, J., Dinneny, J. R., Khuri-Yakub, B. T., Arbabian, A., IEEE  
IEEE.2019: 1992–95
- **High Sensitivity and Wide Bandwidth Airborne CMUTs with Low Driving Voltage**  
Ma, B., Firouzi, K., Brenner, K., Khuri-Yakub, B. T., IEEE  
IEEE.2019: 1201–4
- **Improved Interface Circuits for CMUT Chemical Sensors**  
Stedman, Q., Fox, J. D., Khuri-Yakub, B. T., IEEE  
IEEE.2019: 989–92
- **Compact Fast-Switching DC and Resonant RF Drivers for a Dual-Mode Imaging and HIFU 2D CMUT Array**  
Stedman, Q., Gu, L., Pai, C., Rasmussen, M., Brenner, K., Ma, B., Ergun, A., Davila, J., Khuri-Yakub, B., IEEE  
IEEE.2019: 1951–54
- **High-Efficiency Output Pressure Performance Using Capacitive Micromachined Ultrasonic Transducers with Substrate-Embedded Springs** *SENSORS*  
Lee, B., Nikoozadeh, A., Park, K., Khuri-Yakub, B. T.  
2018; 18 (8)
- **An Analytical Model for Capacitive Pressure Transducers With Circular Geometry** *JOURNAL OF MICROELECTROMECHANICAL SYSTEMS*  
Wygant, I. O., Kupnik, M., Khuri-Yakub, B. T.  
2018; 27 (3): 448–56
- **A Column-Row-Parallel Ultrasound Imaging Architecture for 3-D Plane-Wave Imaging and Tx Second-Order Harmonic Distortion Reduction** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*  
Chen, K., Lee, B., Thomenius, K. E., Khuri-Yakub, B. T., Lee, H., Sodini, C. G.  
2018; 65 (5): 828–43
- **Focused Ultrasound Activates Task Potassium Channels, Increases Membrane Capacitance, and Modulates Action Potential Waveform and Firing Properties in Hippocampal Brain Slices**  
Prieto, M. L., Madison, D. V., Khuri-Yakub, B. T., Maduke, M.  
CELL PRESS.2018: 669A
- **Activation of Piezo1 but Not NaV1.2 Channels by Ultrasound at 43 MHz.** *Ultrasound in medicine & biology*  
Prieto, M. L., Firouzi, K. n., Khuri-Yakub, B. T., Maduke, M. n.  
2018
- **Localization of weak objects in reverberant fields using waveform inversion** *JOURNAL OF THE ACOUSTICAL SOCIETY OF AMERICA*  
Firouzi, K., Khuri-Yakub, B. T.  
2017; 142 (2): 1088–97
- **A k-Space Pseudospectral Method for Elastic Wave Propagation in Heterogeneous Anisotropic Media** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*  
Firouzi, K., Khuri-Yakub, B. T.  
2017; 64 (4): 749-760
- **A learning method for localizing objects in reverberant domains with limited measurements.** *journal of the Acoustical Society of America*  
Firouzi, K., Khuri-Yakub, B. T.  
2017; 141 (1): 104-?
- **An 8-Channel CMUT Chemical Sensor Array on a Single Chip**

- Stedman, Q., Park, K., Khuri-Yakub, B. T., IEEE  
IEEE.2017
- **Multitouch Touchscreen using Reverberant Lamb Waves**  
Firouzi, K., Nikoozadeh, A., Carver, T. E., Khuri-Yakub, B. T., IEEE  
IEEE.2017
  - **Multi-Parameter Optimization of Vented CMUTs for Airborne Applications**  
Ma, B., Chang, C., Oguz, H., Firouzi, K., Khuri-Yakub, B. T., IEEE  
IEEE.2017
  - **Integration of a Dual-Mode Catheter for Ultrasound Image Guidance and HIFU Ablation using a 2-D CMUT Array**  
Jang, J., Chang, C., Rasmussen, M., Moini, A., Brenner, K., Stephens, D. N., Oralkan, O., Khuri-Yakub, B., IEEE  
IEEE.2017
  - **Efficient Transcranial Ultrasound Delivery via Excitation of Lamb Waves: Concept and Preliminary Results**  
Firouzi, K., Ghanouni, P., Khuri-Yakub, B. T., IEEE  
IEEE.2017
  - **Capsule Ultrasound Device: Characterization and Testing Results**  
Wang, J., Memon, F., Touma, G., Baltsavias, S., Jang, J., Chang, C., Rasmussen, M., Olcott, E., Jeffrey, R., Arbabian, A., Khuri-Yakub, B. T., IEEE  
IEEE.2017
  - **Ex Vivo HIFU Experiments Using a 32 x 32-Element CMUT Array** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*  
Yoon, H., Chang, C., Jang, J. H., Bhuyan, A., Choe, J. W., Nikoozadeh, A., Watkins, R. D., Stephens, D. N., Pauly, K. B., Khuri-Yakub, B. T.  
2016; 63 (12): 2150-2158
  - **Ex Vivo HIFU Experiments Using a 32 x 32-Element CMUT Array.** *IEEE transactions on ultrasonics, ferroelectrics, and frequency control*  
Yoon, H., Chang, C., Jang, J. H., Bhuyan, A., Choe, J. W., Nikoozadeh, A., Watkins, R. D., Stephens, D. N., Butts Pauly, K., Khuri-Yakub, B. T.  
2016; 63 (12): 2150-2158
  - **Lamb Wave Multitouch Ultrasonic Touchscreen** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*  
Firouzi, K., Nikoozadeh, A., Carver, T. E., Khuri-Yakub, B. (.  
2016; 63 (12): 2174-2186
  - **Design of Tunable Ultrasonic Receivers for Efficient Powering of Implantable Medical Devices With Reconfigurable Power Loads** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*  
Chang, T. C., Weber, M. J., Wang, M. L., Charthad, J., Khuri-Yakub, B. (. Arbabian, A.  
2016; 63 (10): 1554-1562
  - **Ex-vivo HIFU experiments using a 32x32-element CMUT array.** *IEEE transactions on ultrasonics, ferroelectrics, and frequency control*  
Yoon, H., Chang, C., Jang, J. H., Bhuyan, A., Choe, J. W., Nikoozadeh, A., Watkins, R., Stephens, D., Butts Pauly, K., Khuri-Yakub, B.  
2016
  - **Noncontact thermoacoustic detection of targets embedded in dispersive media**  
Boyle, K. C., Nan, H., Khuri-Yakub, B. T., Arbabian, A., Kamerman, G., Steinvall, O.  
SPIE-INT SOC OPTICAL ENGINEERING.2016
  - **Capsule Ultrasound Device: Further Developments**  
Memon, F., Touma, G., Wang, J., Baltsavias, S., Moini, A., Chang, C., Rasmussen, M., Nikoozadeh, A., Choe, J., Olcott, E., Jeffrey, R., Arbabian, A., Khuri-Yakub, et al  
IEEE.2016
  - **CMUT Chip with Integrated Temperature and Pressure Sensors**  
Stedman, Q., Park, K., Khuri-Yakub, B. T., IEEE  
IEEE.2016
  - **CMUT DESIGN EQUATIONS FOR OPTIMIZING NOISE FIGURE AND SOURCE PRESSURE**  
Wygant, I. O., Kupnik, M., Khuri-Yakub, B. T., IEEE  
IEEE.2016

- **Standoff Tracking of Medical Interventional Devices using Non-Contact Microwave Thermoacoustic Detection**  
Alexopoulos, G., Boyle, K. C., Dolatsha, N., Nan, H., Khuri-Yakub, B. T., Arbabian, A., IEEE  
IEEE.2016
- **Ultrasound-guided delivery of microRNA loaded nanoparticles into cancer** *JOURNAL OF CONTROLLED RELEASE*  
Wang, T., Choe, J. W., Pu, K., Devulapally, R., Bachawal, S., Machtaler, S., Chowdhury, S. M., Luong, R., Tian, L., Khuri-Yakub, B., Rao, J., Paulmurugan, R., Willmann, et al  
2015; 203: 99-108
- **Non-contact thermoacoustic detection of embedded targets using airborne-capacitive micromachined ultrasonic transducers** *APPLIED PHYSICS LETTERS*  
Nan, H., Boyle, K. C., Apte, N., Aliroteh, M. S., Bhuyan, A., Nikoozadeh, A., Khuri-Yakub, B. T., Arbabian, A.  
2015; 106 (8)
- **Experimental Study of Mutual Acoustic Coupling in CMUTs with Substrate-Embedded Springs**  
Lee, B., Nikoozadeh, A., Park, K., Khuri-Yakub, B. T., IEEE  
IEEE.2015
- **Capsule Ultrasound Device**  
Memon, F., Touma, G., Wang, J., Baltsavias, S., Moini, A., Chang, C., Rasmussen, M., Nikoozadeh, A., Choe, J., Arbabian, A., Jeffrey, R., Olcott, E., Khuri-Yakub, et al  
IEEE.2015
- **Dual-Mode Integrated Circuit for Imaging and HIFU With 2-D CMUT Arrays**  
Jang, J., Rasmussen, M., Bhuyan, A., Yoon, H., Moini, A., Chang, C., Watkins, R. D., Choe, J., Nikoozadeh, A., Stephens, D., Oralkan, O., Pauly, K., Khuri-Yakub, et al  
IEEE.2015
- **Non-Contact Thermoacoustic Imaging of Tissue with Airborne Ultrasound Detection**  
Boyle, K. C., Nan, H., Apte, N., Unlugedik, A., Aliroteh, M. S., Bhuyan, A., Nikoozadeh, A., Khuri-Yakub, B. T., Arbabian, A., IEEE  
IEEE.2015
- **FABRICATION, PACKAGING, AND CATHETER ASSEMBLY OF 2D CMUT ARRAYS FOR ENDOSCOPIC ULTRASOUND AND CARDIAC IMAGING**  
Moini, A., Nikoozadeh, A., Choe, J., Khuri-Yakub, B. T., Chang, C., Stephens, D., Smith, L., Sahn, D., ASME  
AMER SOC MECHANICAL ENGINEERS.2015
- **CMUTS IN PERMANENT CONTACT OPERATION FOR HIGH OUTPUT PRESSURE**  
Ho, M., Hoffmann, M., Unger, A., Park, K., Kupnik, M., Khuri-Yakub, B. T., ASME  
AMER SOC MECHANICAL ENGINEERS.2015
- **CMUTS WITH VENTED CAVITIES FOR AIRBORNE APPLICATIONS**  
Apte, N., Nikoozadeh, A., Khuri-Yakub, B. T., Park, K., Crocker, M. J., Pawelczyk, M., Pedrielli, F., Carletti, E., Luzzi, S.  
INT INST ACOUSTICS & VIBRATION.2015
- **A Multichannel Oscillator for a Resonant Chemical Sensor System** *IEEE TRANSACTIONS ON INDUSTRIAL ELECTRONICS*  
Lee, H. J., Park, K. K., Oralkan, O., Kupnik, M., Khuri-Yakub, B. T.  
2014; 61 (10): 5632-5640
- **Singulation for imaging ring arrays of capacitive micromachined ultrasonic transducers.** *Journal of micromechanics and microengineering : structures, devices, and systems*  
Chang, C., Moini, A., Nikoozadeh, A., Sarioglu, A. F., Apte, N., Zhuang, X., Khuri-Yakub, B. T.  
2014; 24 (10)
- **Singulation for imaging ring arrays of capacitive micromachined ultrasonic transducers** *13th International Conference on Micro and Nano Technology for Power Generation and Energy Conversion Applications (PowerMEMS)*  
Chang, C., Moini, A., Nikoozadeh, A., Sarioglu, A. F., Apte, N., Zhuang, X., Khuri-Yakub, B. T.  
IOP PUBLISHING LTD.2014
- **Acoustic lens for capacitive micromachined ultrasonic transducers** *24th MicroMechanics and Microsystems Europe Conference (MME)*  
Chang, C., Firouzi, K., Park, K. K., Sarioglu, A. F., Nikoozadeh, A., Yoon, H., Vaithilingam, S., Carver, T., Khuri-Yakub, B. T.

IOP PUBLISHING LTD.2014

- **Non- Flexural Parallel Piston Movement across CMUT with Substrate-Embedded Springs**  
Lee, B., Nikoozadeh, A., Park, K., Khuri-Yakub, B. T., IEEE  
IEEE.2014: 591–94
- **Bandwidth and Sensitivity Optimization in CMUTs for Airborne Applications** *IEEE International Ultrasonics Symposium (IUS)*  
Apte, N., Park, K. K., Nikoozadeh, A., Khuri-Yakub, B. T.  
IEEE.2014: 166–169
- **Numerical Modeling of Ultrasonic Touchscreen**  
Firouzi, K., Nikoozadeh, A., Khuri-Yakub, B. T., IEEE  
IEEE.2014: 753–56
- **Modeling Elastic Waves in Heterogeneous Anisotropic Media using a k-Space Method**  
Firouzi, K., Nikoozadeh, A., Khuri-Yakub, B. T., IEEE  
IEEE.2014: 1356–59
- **Distinguishing Chemicals Using CMUT Chemical Sensor Array and Artificial Neural Networks**  
Stedman, Q., Park, K., Khuri-Yakub, B. T., IEEE  
IEEE.2014: 162–65
- **A Column-Row-Parallel Ultrasound Imaging Architecture for 3D Plane-wave Imaging and Tx 2nd-Order Harmonic Distortion (HD2) Reduction**  
Chen, K., Lee, B., Thomenius, K., Khuri-Yakub, B. T., Lee, H., Sodini, C. G., IEEE  
IEEE.2014: 317–20
- **Integrated Circuits for Volumetric Ultrasound Imaging With 2-D CMUT Arrays** *IEEE International Solid-State Circuits Flagship Conference of the IEEE Solid-State-Circuits-Society (ISSCC)*  
Bhuyan, A., Choe, J. W., Lee, B. C., Wygant, I. O., Nikoozadeh, A., Oralkan, O., Khuri-Yakub, B. T.  
IEEE-INST ELECTRICAL ELECTRONICS ENGINEERS INC.2013: 796–804
- **Dynamic Response of Model Lipid Membranes to Ultrasonic Radiation Force** *PLOS ONE*  
Prieto, M. L., Oralkan, O., Khuri-Yakub, B. T., Maduke, M. C.  
2013; 8 (10)
- **3-D airborne ultrasound synthetic aperture imaging based on capacitive micromachined ultrasonic transducers** *ULTRASONICS*  
Park, K. K., Khuri-Yakub, B. T.  
2013; 53 (7): 1355-1362
- **New technologies in clinical ultrasound.** *Seminars in roentgenology*  
Kamaya, A., Machtaler, S., Safari Sanjani, S., Nikoozadeh, A., Graham Sommer, F., Pierre Khuri-Yakub, B. T., Willmann, J. K., Desser, T. S.  
2013; 48 (3): 214-223
- **New Technologies in Clinical Ultrasound** *SEMINARS IN ROENTGENOLOGY*  
Kamaya, A., Machtaler, S., Sanjani, S. S., Nikoozadeh, A., Sommer, F. G., Khuri-Yakub, B. T., Willmann, J. K., Desser, T. S.  
2013; 48 (3): 214-223
- **Packaging and Modular Assembly of Large-Area and Fine-Pitch 2-D Ultrasonic Transducer Arrays** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*  
Lin, D., Wodnicki, R., Zhuang, X., Woychik, C., Thomenius, K. E., Fisher, R. A., Mills, D. M., Byun, A. J., Burdick, W., Khuri-Yakub, P., Bonitz, B., Davies, T., Thomas, et al  
2013; 60 (7): 1356-1375
- **GPU-Based Real-Time Volumetric Ultrasound Image Reconstruction for a Ring Array** *IEEE TRANSACTIONS ON MEDICAL IMAGING*  
Choe, J. W., Nikoozadeh, A., Oralkan, O., Khuri-Yakub, B. T.  
2013; 32 (7): 1258-1264
- **Photoacoustic imaging of the bladder: a pilot study.** *Journal of ultrasound in medicine*  
Kamaya, A., Vaithilingam, S., Chung, B. I., Oralkan, O., Khuri-Yakub, B. T.  
2013; 32 (7): 1245-1250

- **A Comparison Between Conventional and Collapse-Mode Capacitive Micromachined Ultrasonic Transducers in 10-MHz 1-D Arrays** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*  
Park, K. K., Oralkan, O., Khuri-Yakub, B. T.  
2013; 60 (6): 1245-1255
- **A comparison between conventional and collapse-mode capacitive micromachined ultrasonic transducers in 10-MHz 1-D arrays.** *IEEE transactions on ultrasonics, ferroelectrics, and frequency control*  
Kwan Kyu Park, Oralkan, O., Khuri-Yakub, B. T.  
2013; 60 (6): 1245-1255
- **3-D airborne ultrasound synthetic aperture imaging based on capacitive micromachined ultrasonic transducers** *Ultrasonics*  
Park, K., K., Khuri-Yakub, B., T.  
2013; 53: 1355-1362
- **3D Volumetric Ultrasound Imaging with a 32x32 CMUT Array Integrated with Front-End ICs Using Flip-Chip Bonding Technology**  
Bhuyan, A., Choe, J., Lee, B., Wygant, I., Nikoozadeh, A., Oralkan, O., Khuri-Yakub, B. T., IEEE  
IEEE.2013: 396-+
- **Dynamic response of model lipid membranes to ultrasonic radiation force.** *PloS one*  
Prieto, M. L., Ömer, O., Khuri-Yakub, B. T., Maduke, M. C.  
2013; 8 (10)
- **Fabrication of CMUTs with Substrate-embedded Springs** *IEEE International Ultrasonics Symposium (IUS)*  
Lee, B. C., Nikoozadeh, A., Park, K. K., Khuri-Yakub, B. (.  
IEEE.2013: 1733-1736
- **GPU-Based Real-Time Imaging Software Suite for Medical Ultrasound** *IEEE International Ultrasonics Symposium (IUS)*  
Choe, J. W., Nikoozadeh, A., Oralkan, O., Khuri-Yakub, B. T.  
IEEE.2013: 2057-2060
- **A 32x32 Integrated CMUT Array for Volumetric Ultrasound Imaging** *IEEE International Ultrasonics Symposium (IUS)*  
Bhuyan, A., Chang, C., Choe, J. W., Lee, B. C., Nikoozadeh, A., Oralkan, O., Khuri-Yakub, B. T.  
IEEE.2013: 541-544
- **VOLUMETRIC CHARACTERIZATION OF ULTRASONIC TRANSDUCERS FOR GAS FLOW METERING** *IEEE International Ultrasonics Symposium (IUS)*  
Hoffmann, M., Unger, A., Ho, M., Park, K. K., Khuri-Yakub, B. T., Kupnik, M.  
IEEE.2013: 1307-1310
- **Experimental evaluation of CMUTs with vented cavities under varying pressure** *IEEE International Ultrasonics Symposium (IUS)*  
Apte, N., Park, K. K., Khuri-Yakub, B. T.  
IEEE.2013: 1724-1727
- **FINITE ELEMENT ANALYSIS OF MECHANICALLY AMPLIFIED CMUTS** *IEEE International Ultrasonics Symposium (IUS)*  
Unger, A., Hoffmann, M., Ho, M., Park, K. K., Khuri-Yakub, B. T., Kupnik, M.  
IEEE.2013: 287-290
- **Air-coupled CMUTs operating at ambient pressures ranging from 1 to 20 atm** *IEEE International Ultrasonics Symposium (IUS)*  
Ho, M., Park, K. K., Eckhoff, K., Kupnik, M., Khuri-Yakub, B. T.  
IEEE.2013: 1404-1407
- **A Comparison Between Conventional and Collapse-Mode Capacitive Micromachined Ultrasonic Transducers in 10-MHz 1-D Arrays** *Ultrasonics, Ferroelectrics and Frequency Control, IEEE Transactions on*  
Park, K., K., Oralkan, O., Khuri-Yakub, B., T.  
2013; 60 (6): 1245-1255
- **Dynamic Response of Model Lipid Membranes to Ultrasonic Radiation Force** *PLOS ONE*  
Prieto, M., L., Oralkan, O., Khuri-Yakub, B., T., Maduke, M., C.  
2013; 8 (10)

- **Precise Neural Stimulation in the Retina Using Focused Ultrasound** *J. Neuroscience*  
Menz, M., D., Oralkan, O., Khuri-Yakub, P., T., Baccus, S., A.  
2013; 33 (10): 4550-4560
- **Functionalization layers for CO<sub>2</sub> sensing using capacitive micromachined ultrasonic transducers** *SENSORS AND ACTUATORS B-CHEMICAL*  
Lee, H. J., Park, K. K., Kupnik, M., Khuri-Yakub, B. T.  
2012; 174: 87-93
- **Dynamic response of an array of flexural plates in acoustic medium** *JOURNAL OF THE ACOUSTICAL SOCIETY OF AMERICA*  
Park, K. K., Khuri-Yakub, B. T.  
2012; 132 (4): 2292-2303
- **Volumetric Real-Time Imaging Using a CMUT Ring Array** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*  
Choe, J. W., Oralkan, O., Nikoozadeh, A., Gencel, M., Stephens, D. N., O'Donnell, M., Sahn, D. J., Khuri-Yakub, B. T.  
2012; 59 (6): 1201-1211
- **Family of Enhanced Photoacoustic Imaging Agents for High-Sensitivity and Multiplexing Studies in Living Mice** *ACS NANO*  
de la Zerda, A., Bodapati, S., Teed, R., May, S. Y., Tabakman, S. M., Liu, Z., Khuri-Yakub, B. T., Chen, X., Dai, H., Gambhir, S. S.  
2012; 6 (6): 4694-4701
- **Deep Tissue Photoacoustic Imaging Using a Miniaturized 2-D Capacitive Micromachined Ultrasonic Transducer Array** *IEEE TRANSACTIONS ON BIOMEDICAL ENGINEERING*  
Kothapalli, S., Ma, T., Vaithilingam, S., Oralkan, O., Khuri-Yakub, B. T., Gambhir, S. S.  
2012; 59 (5): 1199-1204
- **Mesoporous Thin-Film on Highly-Sensitive Resonant Chemical Sensor for Relative Humidity and CO<sub>2</sub> Detection** *ANALYTICAL CHEMISTRY*  
Lee, H. J., Park, K. K., Kupnik, M., Melosh, N. A., Khuri-Yakub, B. T.  
2012; 84 (7): 3063-3066
- **First In Vivo Use of a Capacitive Micromachined Ultrasound Transducer Array-Based Imaging and Ablation Catheter** *JOURNAL OF ULTRASOUND IN MEDICINE*  
Stephens, D. N., Truong, U. T., Nikoozadeh, A., Oralkan, O., Seo, C. H., Cannata, J., Dentinger, A., Thomenius, K., de la Rama, A., Nguyen, T., Lin, F., Khuri-Yakub, P., Mahajan, et al  
2012; 31 (2): 247-256
- **Ultrasound-Induced Currents in Planar Lipid Blayers: Origins and Potential Physiological Significance**  
Prieto, M. L., Oralkan, O., Khuri-Yakub, B. T., Maduke, M. C.  
CELL PRESS.2012: 34A
- **Nanoscale Topography of Thermally-Grown Oxide Films at Right-Angled Convex Corners of Silicon** *JOURNAL OF THE ELECTROCHEMICAL SOCIETY*  
Sarioglu, A. F., Kupnik, M., Vaithilingam, S., Khuri-Yakub, B. T.  
2012; 159 (2): H79-H84
- **Understanding CMUTs with Substrate-Embedded Springs** *IEEE International Ultrasonics Symposium (IUS)*  
Lee, B. C., Nikoozadeh, A., Park, K., Khuri-Yakub, B. (.  
IEEE.2012: 1008-1011
- **Comparison of conventional and collapse-mode CMUT in 1-D array configuration** *IEEE International Ultrasonics Symposium (IUS)*  
Park, K. K., Oralkan, O., Khuri-Yakub, B. T.  
IEEE.2012: 1000-1003
- **Miniaturized, Wearable, Ultrasound Probe for On-Demand Ultrasound Screening** *IEEE International Ultrasonics Symposium (IUS)*  
Bhuyan, A., Choe, J. W., Lee, B. C., Cristman, P., Oralkan, O., Khuri-Yakub, B. T.  
IEEE.2012: 1060-1063
- **Finite Element Analysis of CMUTs with Pressurized Cavities** *IEEE International Ultrasonics Symposium (IUS)*  
Apte, N., Park, K. K., Khuri-Yakub, B. T.  
IEEE.2012: 979-982
- **Long-term measurement results of pre-charged CMUTs with zero external bias operation** *IEEE International Ultrasonics Symposium (IUS)*



- Ho, M., Kupnik, M., Park, K. K., Khuri-Yakub, B. T.  
IEEE.2012: 89–92
- **Fabrication and model validation for CMUTs operated in permanent contact mode** *IEEE International Ultrasonics Symposium (IUS)*  
Ho, M., Kupnik, M., Vaithilingam, S., Khuri-Yakub, B. T.  
IEEE.2012: 1016–1019
  - **CMUTS FOR AIR COUPLED ULTRASOUND WITH IMPROVED BANDWIDTH** *IEEE International Ultrasonics Symposium (IUS)*  
Kupnik, M., Ho, M., Vaithilingam, S., Khuri-Yakub, B. T.  
IEEE.2012: 592–595
  - **Wide pressure range operation of air-coupled CMUTs** *IEEE International Ultrasonics Symposium (IUS)*  
Ho, M., Kupnik, M., Park, K. K., Eckhoff, K., Khuri-Yakub, B. T.  
IEEE.2012: 93–96
  - **Real-Time Volumetric Imaging System for CMUT Arrays** *IEEE International Ultrasonics Symposium (IUS)*  
Choe, J. W., Oralkan, O., Nikoozadeh, A., Bhuyan, A., Lee, B. C., Gencel, M., Khuri-Yakub, B. T.  
IEEE.2012: 1064–1067
  - **Interdigitated Annular CMUT Arrays for Ultrasound Assisted Delivery of Fluorescent Contrast Agents** *IEEE International Ultrasonics Symposium (IUS)*  
Cristman, P., Oralkan, O., Mandella, M., Solgaard, O., Contag, C., Khuri-Yakub, B. T.  
IEEE.2012: 96–99
  - **Large Area 1D CMUT Phased Arrays for Multi-Modality Ultrasound Imaging** *IEEE International Ultrasonics Symposium (IUS)*  
Apte, N., Vaithilingam, S., Sarioglu, A. F., Kupnik, M., Khuri-Yakub, B. T.  
IEEE.2012: 612–615
  - **Chemical Vapor Detection Using a Capacitive Micromachined Ultrasonic Transducer** *ANALYTICAL CHEMISTRY*  
Lee, H. J., Park, K. K., Kupnik, M., Oralkan, O., Khuri-Yakub, B. T.  
2011; 83 (24): 9314-9320
  - **Capacitive micromachined ultrasonic transducer (CMUT) as a chemical sensor for DMMP detection** *SENSORS AND ACTUATORS B-CHEMICAL*  
Park, K. K., Lee, H., Kupnik, M., Oralkan, O., Ramseyer, J., Lang, H. P., Hegner, M., Gerber, C., Khuri-Yakub, B. T.  
2011; 160 (1): 1120-1127
  - **Capacitive micromachined ultrasonic transducers for medical imaging and therapy** *JOURNAL OF MICROMECHANICS AND MICROENGINEERING*  
Khuri-Yakub, B. T., Oralkan, O.  
2011; 21 (5)
  - **Capacitive micromachined ultrasonic transducers for medical imaging and therapy.** *Journal of micromechanics and microengineering : structures, devices, and systems*  
Khuri-Yakub, B. T., Oralkan, O.  
2011; 21 (5): 54004-54014
  - **Fabrication of Capacitive Micromachined Ultrasonic Transducers via Local Oxidation and Direct Wafer Bonding** *JOURNAL OF MICROELECTROMECHANICAL SYSTEMS*  
Park, K. K., Lee, H., Kupnik, M., Khuri-Yakub, B. T.  
2011; 20 (1): 95-103
  - **The Feasibility of Using Thermal Strain Imaging to Regulate Energy Delivery During Intracardiac Radio-Frequency Ablation** *Ultrasonics, Ferroelectrics and Frequency Control, IEEE Transactions on*  
Seo, C., H., Stephens, D., N., Cannata, J., Dentinger, A., Lin, F., Park, S., Khuri-Yakub, Butrus, T.  
2011; 58 (7): 1406-16
  - **Fabrication of CMUT Cells with Gold Center Mass for Higher Output Pressure** *10th International Symposium on Therapeutic Ultrasound*  
Yoon, H., Ho, M., Apte, N., Cristman, P., Vaithilingam, S., Kupnik, M., Butts-Pauly, K., Khuri-Yakub, B. T.  
AMER INST PHYSICS.2011: 183–188
  - **Encapsulation of Capacitive Micromachined Ultrasonic Transducers Using Viscoelastic Polymer** *JOURNAL OF MICROELECTROMECHANICAL SYSTEMS*  
Lin, D., Zhuang, X., Wong, S. H., Kupnik, M., Khuri-Yakub, B. T.  
2010; 19 (6): 1341-1351

- **Encapsulation of Capacitive Micromachined Ultrasonic Transducers Using Viscoelastic Polymer.** *Journal of microelectromechanical systems : a joint IEEE and ASME publication on microstructures, microactuators, microsensors, and microsystems*  
Lin, D. S., Zhuang, X., Wong, S. H., Kupnik, M., Khuri-Yakub, B. T.  
2010; 19 (6): 1341-1351
- **FEA of CMUTs Suitable for Wide Gas Pressure Range Applications.** *Proceedings. IEEE Ultrasonics Symposium*  
Ho, M., Kupnik, M., Khuri-Yakub, B. T.  
2010; 2010: 1234-1237
- **Modeling and Measuring the Effects of Mutual Impedance on Multi-Cell CMUT Configurations.** *Proceedings. IEEE Ultrasonics Symposium*  
Park, K. K., Kupnik, M., Lee, H. J., Khuri-Yakub, B. T., Wygant, I. O.  
2010; 2010: 431-434
- **3-D Deep Penetration Photoacoustic Imaging with a 2-D CMUT Array.** *Proceedings. IEEE Ultrasonics Symposium*  
Ma, T., Kothapalli, S. R., Vaithilingam, S., Oralkan, O., Kamaya, A., Wygant, I. O., Zhuang, X., Gambhir, S. S., Jeffrey, R. B., Khuri-Yakub, B. T.  
2010; 2010: 375-377
- **CMUT Fabrication Based On A Thick Buried Oxide Layer.** *Proceedings. IEEE Ultrasonics Symposium*  
Kupnik, M., Vaithilingam, S., Torashima, K., Wygant, I. O., Khuri-Yakub, B. T.  
2010; 2010: 547-550
- **Design, Synthesis, and Imaging of an Activatable Photoacoustic Probe** *JOURNAL OF THE AMERICAN CHEMICAL SOCIETY*  
Levi, J., Kothapalli, S. R., Ma, T., Hartman, K., Khuri-Yakub, B. T., Gambhir, S. S.  
2010; 132 (32): 11264-11269
- **Ultrahigh Sensitivity Carbon Nanotube Agents for Photoacoustic Molecular Imaging in Living Mice** *NANO LETTERS*  
de la Zerda, A., Liu, Z., Bodapati, S., Teed, R., Vaithilingam, S., Khuri-Yakub, B. T., Chen, X., Dai, H., Gambhir, S. S.  
2010; 10 (6): 2168-2172
- **Photoacoustic ocular imaging** *OPTICS LETTERS*  
de la Zerda, A., Paulus, Y. M., Teed, R., Bodapati, S., Dollberg, Y., Khuri-Yakub, B. T., Blumenkranz, M. S., Moshfeghi, D. M., Gambhir, S. S.  
2010; 35 (3): 270-272
- **Miniaturized Ultrasound Imaging Probes Enabled by CMUT Arrays with Integrated Frontend Electronic Circuits** *32nd Annual International Conference of the IEEE Engineering-in-Medicine-and-Biology-Society (EMBC 10)*  
Khuri-Yakub, B. (. Oralkan, O., Nikoozadeh, A., Wygant, I. O., Zhuang, S., Gencel, M., Choe, J. W., Stephens, D. N., de la Rama, A., Chen, P., Lin, F., Dentinger, A., Wildes, et al  
IEEE.2010: 5987-5990
- **Zero-Bias Resonant Sensor with an Oxide-Nitride Layer as Charge Trap** *2010 IEEE Sensors Conference*  
Park, K. K., Kupnik, M., Lee, H. J., Oralkan, O., Khuri-Yakub, B. T.  
IEEE.2010: 1024-1028
- **Highly Sensitive Detection of DMMP Using a CMUT-based Chemical Sensor** *2010 IEEE Sensors Conference*  
Lee, H. J., Park, K. K., Kupnik, M., Oralkan, O., Khuri-Yakub, B. T.  
IEEE.2010: 2122-2126
- **PACKAGING OF LARGE AND LOW-PITCH SIZE 2D ULTRASONIC TRANSDUCER ARRAYS** *23rd IEEE International Conference on Micro Electro Mechanical Systems (MEMS 2010)*  
Lin, D., Zhuang, X., Wodnicki, R., Woychik, C. G., Oralkan, O., Kupnik, M., Khuri-Yakub, B. T.  
IEEE.2010: 508-511
- **Capacitive Micromachined Ultrasonic Transducers for Therapeutic Ultrasound Applications** *IEEE TRANSACTIONS ON BIOMEDICAL ENGINEERING*  
Wong, S. H., Kupnik, M., Watkins, R. D., Butts-Pauly, K., Khuri-Yakub, B. T.  
2010; 57 (1): 114-123
- **Three-Dimensional Photoacoustic Imaging Using a Two-Dimensional CMUT Array** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*  
Vaithilingam, S., Ma, T., Furukawa, Y., Wygant, I. O., Zhuang, X., de la Zerda, A., Oralkan, O., Kamaya, A., Gambhir, S. S., Jeffrey, R. B., Khuri-Yakub, B. T.  
2009; 56 (11): 2411-2419

- **An Integrated Circuit With Transmit Beamforming Flip-Chip Bonded to a 2-D CMUT Array for 3-D Ultrasound Imaging** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*  
Wygant, I. O., Jamal, N. S., Lee, H. J., Nikoozadeh, A., Oralkan, O., Karaman, M., Khuri-Yakub, B. T.  
2009; 56 (10): 2145-2156
- **Minimally Redundant 2-D Array Designs for 3-D Medical Ultrasound Imaging** *IEEE TRANSACTIONS ON MEDICAL IMAGING*  
Karaman, M., Wygant, I. O., Oralkan, O., Khuri-Yakub, B. T.  
2009; 28 (7): 1051-1061
- **Next-Gen Ultrasound** *IEEE SPECTRUM*  
Khuri-Yakub, B. T., Oralkan, O., Kupnik, M.  
2009; 46 (5): 44-?
- **Experimental Studies With a 9F Forward-Looking Intracardiac Imaging and Ablation Catheter** *JOURNAL OF ULTRASOUND IN MEDICINE*  
Stephens, D. N., O'Donnell, M., Thomenius, K., Dentinger, A., Wildes, D., Chen, P., Shung, K. K., Cannata, J., Khuri-Yakub, P., Oralkan, O., Mahajan, A., Shivkumar, K., Sahn, et al  
2009; 28 (2): 207-215
- **50 kHz Capacitive Micromachined Ultrasonic Transducers for Generation of Highly Directional Sound with Parametric Arrays** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*  
Wygant, I. O., Kupnik, M., Windsor, J. C., Wright, W. M., Wochner, M. S., Yaralioglu, G. G., Hamilton, M. F., Khuri-Yakub, B. T.  
2009; 56 (1): 193-203
- **A LOW-NOISE OSCILLATOR BASED ON A MULTI-MEMBRANE CMUT FOR HIGH SENSITIVITY RESONANT CHEMICAL SENSORS** *22nd International Conference on Micro Electro Mechanical Systems (MEMS)*  
Lee, H. J., Park, K. K., Cristman, P., Oralkan, O., Kupnik, M., Khuri-Yakub, B. T.  
IEEE.2009: 761-764
- **Enhanced Sensitivity Carbon Nanotubes as Targeted Photoacoustic Molecular Imaging Agents** *Conference on Photons Plus Ultrasound - Imaging and Sensing 2009*  
de la Zerda, A., Liu, Z., Zavaleta, C., Bodapati, S., Teed, R., Vaithilingam, S., Ma, T., Oralkan, O., Chen, X., Khuri-Yakub, B. T., Dai, H., Gambhir, S. S.  
SPIE-INT SOC OPTICAL ENGINEERING.2009
- **Progress in Development of HIFU CMUTs for use under MR-guidance** *8th International Symposium on Therapeutic Ultras*  
Wong, S. H., Watkins, R. D., Kupnik, M., Pauly, K. B., Khuri-Yakub, B. T.  
AMER INST PHYSICS.2009: 327-331
- **Photoacoustic Molecular Imaging using Single Walled Carbon Nanotubes in Living Mice** *Conference on Photons Plus Ultrasound - Imaging and Sensing 2009*  
de la Zerda, A., Zavaleta, C., Keren, S., Vaithilingam, S., Bodapati, S., Teed, R., Liu, Z., Levi, J., Smith, B. R., Ma, T., Oralkan, O., Cheng, Z., Chen, et al  
SPIE-INT SOC OPTICAL ENGINEERING.2009
- **A Family of Intracardiac Ultrasound Imaging Devices Designed for Guidance of Electrophysiology Ablation Procedures** *Annual International Conference of the IEEE-Engineering-in-Medicine-and-Biology-Society*  
Sahn, D. J., Stephens, D. N., Cannata, J. M., Shung, K. K., Oralkan, O., Nikoozadeh, A., Khuri-Yakub, B. T., Nguyen, H., Chen, P., Dentinger, A. M., Wildes, D., Thomenius, K. E., Mahajan, et al  
IEEE.2009: 1913-1917
- **Wafer-Bonded 2-D CMUT Arrays Incorporating Through-Wafer Trench-Isolated Interconnects with a Supporting Frame** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*  
Zhang, X., Wygant, I. O., Lin, D., Kupnik, M., Oralkan, O., Khuri-Yakub, B. T.  
2009; 56 (1): 182-192
- **Capacitive Micromachined Ultrasonic Transducers with Piston-Shaped Membranes: Fabrication and Experimental Characterization** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*  
Huang, Y., Zhuang, X., Haeggstrom, E. O., Ergun, A. S., Cheng, C., Khuri-Yakub, B. T.  
2009; 56 (1): 136-145
- **Forward-Looking Intracardiac Ultrasound Imaging Using a 1-D CMUT Array Integrated With Custom Front-End Electronics** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*

- Nikoozadeh, A., Wygant, I. O., Lin, D., Oralkan, O., Ergun, A. S., Stephens, D. N., Thomenius, K. E., Dentinger, A. M., Wildes, D., Akopyan, G., Shivkumar, K., Mahajan, A., Sahn, et al  
2008; 55 (12): 2651-2660
- **Evaluation of wafer bonded CMUTs with rectangular membranes featuring high fill factor** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*  
Wong, S. H., Kupnik, M., Zhuang, X., Lin, D., Butts-Pauly, K., Khuri-Yakub, B. T.  
2008; 55 (9): 2053-2065
  - **Carbon nanotubes as photoacoustic molecular imaging agents in living mice** *NATURE NANOTECHNOLOGY*  
de la Zerda, A., Zavaleta, C., Keren, S., Vaithilingam, S., Bodapati, S., Liu, Z., Levi, J., Smith, B. R., Ma, T., Oralkan, O., Cheng, Z., Chen, X., Dai, et al  
2008; 3 (9): 557-562
  - **Multifunctional catheters combining intracardiac ultrasound imaging and electrophysiology sensing** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*  
Stephens, D. N., Cannata, J., Liu, R., Zhao, J. Z., Shung, K. K., Nguyen, H., Chia, R., Dentinger, A., Wildes, D., Thomenius, K. E., Mahajan, A., Shivkumar, K., Kim, et al  
2008; 55 (7): 1570-1581
  - **Fabrication of flexible transducer arrays with through-wafer electrical interconnects based on trench refilling with PDMS** *JOURNAL OF MICROELECTROMECHANICAL SYSTEMS*  
Zhuang, X., Lin, D., Oralkan, O., Khuri-Yakub, B. T.  
2008; 17 (2): 446-452
  - **Feasibility of MR-temperature mapping of ultrasonic heating from a CMUT** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*  
Wong, S. H., Watkins, R. D., Kupnik, M., Pauly, K. B., Khuri-Yakub, B. T.  
2008; 55 (4): 811-818
  - **Capacitive micromachined ultrasonic transducers (CMUTs) with isolation posts** *ULTRASONICS*  
Huang, Y., Zhuang, X., Haeggstrom, E. O., Ergun, A. S., Cheng, C., Khuri-Yakub, B. T.  
2008; 48 (1): 74-81
  - **Integration of 2D CMUT arrays with front-end electronics for volumetric ultrasound imaging** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*  
Wygant, I. O., Zhuang, X., Yeh, D. T., Oralkan, O., Ergun, A. S., Karaman, M., Khuri-Yakub, B. T.  
2008; 55 (2): 327-342
  - **Investigating Large 2D Arrays for Photoacoustic and Acoustic Imaging using CMUT Technology** *IEEE Ultrasonics Symposium*  
Vaithilingam, S., Ma, T., Furukawa, Y., Oralkan, O., Kamaya, A., Torashima, K., Kupnik, M., Wygant, I. O., Zhuang, X., Jeffrey, R. B., Khuri-Yakub, B. T.  
IEEE.2008: 1238-1241
  - **Development of Nanoparticle-Based Gold Contrast Agent for Photoacoustic Tomography** *Nanotechnology Conference and Trade Show (Nanotech 2008)*  
Yang, Y., Vaithilingam, S., Ma, H. T., Salehi-Had, S., Oralkan, O., Khuri-Yakub, B. T., Guccione, S.  
CRC PRESS-TAYLOR & FRANCIS GROUP.2008: 708-711
  - **Analytically Calculating Membrane Displacement and the Equivalent Circuit Model of a Circular CMUT Cell** *IEEE Ultrasonics Symposium*  
Wygant, I. O., Kupnik, M., Khuri-Yakub, B. T.  
IEEE.2008: 2111-2114
  - **Optimum design of circular CMUT membranes for high quality factor in air** *IEEE Ultrasonics Symposium*  
Park, K. K., Lee, H. J., CRISMAN, P., Kupnik, M., Oralkan, O., Khuri-Yakub, B. T.  
IEEE.2008: 504-507
  - **FINITE ELEMENT ANALYSIS OF STRESS STIFFENING EFFECTS IN CMUTs** *IEEE Ultrasonics Symposium*  
Kupnik, M., Wygant, I. O., Khuri-Yakub, B. T.  
IEEE.2008: 487-490
  - **The Design and Characterization of Capacitive Micromachined Ultrasonic Transducers (CMUTs) for Generating High-Intensity Ultrasound for Transmission of Directional Audio** *IEEE Ultrasonics Symposium*  
Wygant, I. O., Kupnik, M., Khuri-Yakub, B. T., Wochner, M. S., Wright, W. M., Hamilton, M. F.

IEEE.2008: 2100–2102

- **Progress in CMUTs for HIFU ablation of upper abdominal cancer** *IEEE Ultrasonics Symposium*  
Wong, S. H., Kupnik, M., Khuri-Yakub, B. T., Watkins, R. D., Pauly, K. B.  
IEEE.2008: 2068–2071
- **The effect of parallelism of CMUT cells on phase noise for chem/bio sensor applications** *IEEE Ultrasonics Symposium*  
Lee, H. J., Park, K. K., Cristman, P., Oralkan, O., Kupnik, M., Khuri-Yakub, B. T.  
IEEE.2008: 1951–1954
- **CMUT as a Chemical Sensor for DMMP Detection** *IEEE International Frequency Control Symposium*  
Lee, H. J., Park, K. K., Oralkan, O., Kupnik, M., Khuri-Yakub, B. T.  
IEEE.2008: 434–439
- **Fabricating capacitive micromachined ultrasonic transducers with direct wafer-bonding and locos technology** *21st IEEE International Conference on Micro Electro Mechanical Systems (MEMS 2008)*  
Park, K. K., Lee, H. J., Kupnik, M., Oralkan, O., Khuri-Yakub, B. T.  
IEEE.2008: 339–342
- **Capacitive micromachined ultrasonic transducers for chemical detection in nitrogen** *APPLIED PHYSICS LETTERS*  
Park, K. K., Lee, H. J., Yaralioglu, G. G., Ergun, A. S., Oralkan, O., Kupnik, M., Quate, C. F., Khuri-Yakub, B. T., Braun, T., Ramseyer, J., Lang, H. P., Hegner, M., Gerber, et al  
2007; 91 (9)
- **Integration of trench-isolated through-wafer interconnects with 2d capacitive micromachined ultrasonic transducer arrays** *SENSORS AND ACTUATORS A-PHYSICAL*  
Zhuang, X., Ergun, A. S., Huang, Y., Wygant, I. O., Oralkan, O., Khuri-Yakub, B. T.  
2007; 138 (1): 221-229
- **Integration of Trench-Isolated Through-Wafer Interconnects with 2D Capacitive Micromachined Ultrasonic Transducer Arrays.** *Sensors and actuators. A, Physical*  
Zhuang, X., Ergun, A. S., Huang, Y., Wygant, I. O., Oralkan, O., Khuri-Yakub, B. T.  
2007; 138 (1): 221-229
- **Biocompatible coatings for CMUTs in a harsh, aqueous environment** *JOURNAL OF MICROMECHANICS AND MICROENGINEERING*  
Zhuang, X., Nikoozadeh, A., Beasley, M. A., Yaralioglu, G. G., Khuri-Yakub, B. T., Pruitt, B. L.  
2007; 17 (5): 994-1001
- **Finite element modeling and experimental characterization of crosstalk in 1-D CMUT arrays** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*  
Bayram, B., Kupnik, M., Yaralioglu, C. G., Oralkan, O., Ergun, A. S., Lin, D., Wong, S. H., Khuri-Yakub, B. T.  
2007; 54 (2): 418-430
- **A co-axial scanning acoustic and. photoacoustic microscope** *IEEE Ultrasonics Symposium*  
Vaithilingam, S., Ma, T., Furukawa, Y., de la Zerda, A., Oralkan, O., Kamaya, A., Keren, S., Gambhir, S. S., Jeffrey, R. B., Khuri-Yakub, B. T.  
IEEE.2007: 2413–2416
- **Extended insulation layer structure for CMUTs** *IEEE Ultrasonics Symposium*  
Kupnik, M., Ergun, A. S., Huang, Y., Khuri-Yakub, B. T.  
IEEE.2007: 511–514
- **Flexible transducer arrays with through-wafer electrical interconnects based on trench refilling with PDMS** *20th IEEE International Conference on Micro Electro Mechanical Systems (MEMS 2007)*  
Zhuang, X., Lin, D., Oralkan, O., Khuri-Yakub, B. T.  
IEEE.2007: 264–267
- **Design of HIFUCMUT arrays for treatment of liver and renal cancer** *6th International Symposium on Therapeutic Ultrasound*  
Wong, S. H., Ergun, A. S., Yaralioglu, G. G., Oralkan, O., Kupnik, M., Pauly, K. B., Khuri-Yakub, B. T.  
AMER INST PHYSICS.2007: 54–60
- **The capacitive micromachined ultrasonic transducer (CMUT) as a Chem/Bio sensor** *IEEE Ultrasonics Symposium*

- Khuri-Yakub, B. T., Park, K. K., Lee, H. J., Yaralioglu, G. G., Ergun, S., Oralkan, O., Kupnik, M., Quate, C. F., Braun, T., Lang, H. P., Hegner, M., Ramseyer, J., Gerber, et al  
IEEE.2007: 472–475
- **Trench-isolated CMUT Arrays with a supporting frame: Characterization and Imaging results** *IEEE Ultrasonics Symposium*  
Zhuang, X., Wygant, I. O., Lin, D., Kupnik, M., Oralkan, O., Khuri-Yakub, B. T.  
IEEE.2007: 507–510
  - **Characterization of fabrication related gap-height variations in capacitive micromachined ultrasonic transducers** *IEEE Ultrasonics Symposium*  
Lin, D., Zhuang, X., Wong, S. H., Ergun, A. S., Kupnik, M., Khuri-Yakub, B. T.  
IEEE.2007: 523–526
  - **An integrated circuit with transmit beamforming and parallel receive channels for 3D ultrasound imaging: Testing and characterization** *IEEE Ultrasonics Symposium*  
Wygant, I. O., Jamal, N., Lee, H. J., Nikoozadeh, A., Zhuang, X., Oralkan, O., Ergun, A. S., Karaman, M., Khuri-Yakub, B. T.  
IEEE.2007: 25–28
  - **50-kHz capacitive micromachined ultrasonic transducers for generating highly directional sound with parametric arrays** *IEEE Ultrasonics Symposium*  
Wygant, I. O., Kupnik, M., Yaralioglu, G., Khuri-Yakub, B. T., Windsor, J. C., Wright, W. M., Wochner, M. S., Hamilton, M. F.  
IEEE.2007: 519–522
  - **Advantages of capacitive micromachined ultrasonics transducers (CMUTs) for high intensity focused ultrasound (HIFU)** *IEEE Ultrasonics Symposium*  
Wong, S. H., Kupnik, M., Butts-Pauly, K., Khuri-Yakub, B. T.  
IEEE.2007: 1313–1316
  - **Feasibility of noncontact intracardiac ultrasound ablation and Imaging catheter for treatment of atrial fibrillation** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*  
Wong, S. H., Scott, G. C., Conolly, S. M., Narayan, G., Liang, D. H.  
2006; 53 (12): 2394-2405
  - **Comparison of conventional and collapsed region operation of capacitive micromachined ultrasonic transducers** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*  
Huang, Y., Haeggstrom, E., Bayram, B., Zhuang, X., Ergun, A. S., Cheng, C., Khuri-Yakub, B. T.  
2006; 53 (10): 1918-1933
  - **Experimental measurements of mechanical dissipation associated with dielectric coatings formed using SiO<sub>2</sub>, Ta<sub>2</sub>O<sub>5</sub> and Al<sub>2</sub>O<sub>3</sub>** *CLASSICAL AND QUANTUM GRAVITY*  
Crooks, D. R., Cagnoli, G., Fejer, M. M., Harry, G., Hough, J., Khuri-Yakub, B. T., Penn, S., Route, R., Rowan, S., Sneddon, P. H., Wygant, I. O., Yaralioglu, G. G.  
2006; 23 (15): 4953-4965
  - **Experimental characterization of collapse-mode CMUT operation** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*  
Oralkan, O., Bayram, B., Yaralioglu, G. G., Ergun, A. S., Kupnik, M., Yeh, D. T., Wygant, I. O., Khuri-Yakub, B. T.  
2006; 53 (8): 1513-1523
  - **3-D ultrasound imaging using a forward-looking CMUT ring array for intravascular/intracardiac applications** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*  
Yeh, D. T., Oralkan, O., Wygant, I. O., O'Donnell, M., Khuri-Yakub, B. T.  
2006; 53 (6): 1202-1211
  - **CAPACITIVE MICROMACHINED ULTRASONIC TRANSDUCERS FOR HIGH INTENSITY FOCUSED ABLATION OF UPPER ABDOMINAL TUMORS** *IEEE Ultrasonics Symposium*  
Wong, S. H., Ergun, A. S., Yaralioglu, G. G., Kupnik, M., Zhuang, X., Oralkan, O., Butts-Pauly, K., Khuri-Yakub, B. T.  
IEEE.2006: 841–844
  - **Beamforming and hardware design for a multichannel front-end integrated circuit for real-time 3D catheter-based ultrasonic imaging.** *Medical Imaging 2006 Conference*  
Wygant, I. O., Karaman, M., Oralkan, O., Khuri-Yakub, B. T.  
SPIE-INT SOC OPTICAL ENGINEERING.2006

- **An Integrated Circuit with Transmit Beamforming and Parallel Receive Channels for Real-Time Three-Dimensional Ultrasound Imaging** *IEEE Ultrasonics Symposium*  
Wygant, I., Lee, H., Nikoozadeh, A., Yeh, D. T., Oralkan, O., Karaman, M., Khuri-Yakub, B. T.  
IEEE.2006: 2186–2189
- **FINITE ELEMENT ANALYSIS OF CMUTs: CONVENTIONAL VS. COLLAPSE OPERATION MODES** *IEEE Ultrasonics Symposium*  
Yaralioglu, G. G., Bayram, B., Khuri-Yakub, B. T.  
IEEE.2006: 586–589
- **FINITE ELEMENT ANALYSIS OF FABRICATION RELATED THERMAL EFFECTS IN CAPACITIVE MICROMACHINED ULTRASONIC TRANSDUCERS** *IEEE Ultrasonics Symposium*  
Kupnik, M., Ergun, A. S., Yaralioglu, G. G., Bayram, B., Oralkan, O., Wong, S. H., Lin, D., Khuri-Yakub, B. T.  
IEEE.2006: 942–945
- **Trench-Isolated CMUT Arrays with a Supporting Frame** *IEEE Ultrasonics Symposium*  
Zhuang, X., Lin, D., Ergun, A. S., Oralkan, O., Khuri-Yakub, B. T.  
IEEE.2006: 1955–1958
- **Capacitive micromachined ultrasonic transducer arrays for integrated diagnostic/therapeutic catheters** *5th International Symposium on Therapeutic Ultrasound*  
Wong, S. H., Wygant, I. O., Yeh, D. T., Zhuang, X., Bayram, B., Kupnik, M., Oralkan, O., Ergun, A. S., Yaralioglu, G. G., Khuri-Yakub, B. T.  
AMER INST PHYSICS.2006: 395–399
- **Capacitive micromachined ultrasonic transducers (CMUTs) for photoacoustic imaging** *7th Conference on Biomedical Thermoacoustics, Optoacoustics, and Acousto-Optics*  
Vaithilingam, S., Wygant, I. O., Kuo, P. S., Zhuang, X., Oralkan, O., Olcott, P. D., Khuri-Yakub, B. T.  
SPIE-INT SOC OPTICAL ENGINEERING.2006
- **ACOUSTIC CROSSTALK REDUCTION METHOD FOR CMUT ARRAYS** *IEEE Ultrasonics Symposium*  
Bayram, B., Yaralioglu, G. G., Kupnik, M., Khuri-Yakub, B. T.  
IEEE.2006: 590–593
- **Adaptive pulse repetition frequency technique for an ultrasonic transit-time gas flowmeter for hot pulsating gases** *Sensors Journal, IEEE*  
Khuri-Yakub, B., T., Kupnik, M., Schroder, A., O'Leary, P., Benes, E., Groeschl, M.  
2006; 6 (4): 906-915
- **Tomographic Photoacoustic Imaging Using Capacitive Micromachined Ultrasonic Transducer (CMUT) Technology** *IEEE Ultrasonics Symposium*  
Vaithilingam, S., Wygant, I. O., Sifferman, S., Zhuang, X., Furukawa, Y., Oralkan, O., Keren, S., Gambhir, S. S., Khuri-Yakub, B. T.  
IEEE.2006: 397–400
- **Volumetric Imaging Using Fan-Beam Scanning with Reduced Redundancy 2D Arrays** *IEEE Ultrasonics Symposium*  
Wygant, I., Karaman, M., Oralkan, O., Khuri-Yakub, B. T.  
IEEE.2006: 2190–2193
- **Interconnection and packaging for 2D capacitive micromachined ultrasonic transducer arrays based on through-wafer trench isolation** *19th IEEE International Conference on Micro Electro Mechanical Systems (MEMS 2006)*  
Zhuang, X. F., Ergun, A. S., Oralkan, O., Wygant, I. O., Khuri-Yakub, B. T.  
IEEE.2006: 270–273
- **Capacitive micromachined ultrasonic transducers: Fabrication technology** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*  
Ergun, A. S., Huang, Y. L., Zhuang, X. F., Oralkan, O., Yaralioglu, G. G., Khuri-Yakub, B. T.  
2005; 52 (12): 2242-2258
- **Introduction to the special issue on micromachined ultrasonic transducers** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*  
Khuri-Yakub, B. T.  
2005; 52 (12): 2162-2162
- **Dynamic analysis of capacitive micromachined ultrasonic transducers** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*

- Bayram, B., Yaralioglu, G. G., Kupnik, M., Ergun, A. S., Oralkan, O., Nikoozadeh, A., Khuri-Yakub, B. T.  
2005; 52 (12): 2270-2275
- **Finite-element analysis of capacitive micromachined ultrasonic transducers** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*  
Yaralioglu, C. G., Ergun, A. S., Khuri-Yakub, B. T.  
2005; 52 (12): 2185-2198
  - **Femtoliter to picoliter droplet generation for organic polymer deposition using single reservoir ejector arrays** *IEEE TRANSACTIONS ON SEMICONDUCTOR MANUFACTURING*  
Demirci, U., Yaralioglu, G. G., Haeggstrom, E., Khuri-Yakub, B. T.  
2005; 18 (4): 709-715
  - **A new design and manufacturing process for embedded Lamb waves interdigital transducers based on piezopolymer film** *18th European Conference on Solid-State Transducers*  
Bellan, F., Bulletti, A., Capineri, L., Masotti, L., Yaralioglu, G. G., Degertekin, F. L., Khuri-Yakub, B. T., Guasti, F., Rosi, E.  
ELSEVIER SCIENCE SA.2005: 379-387
  - **Microfluidic sonicator for real-time disruption of eukaryotic cells and bacterial spores for DNA analysis** *ULTRASOUND IN MEDICINE AND BIOLOGY*  
Marentis, T. C., Kusler, B., Yaralioglu, G. G., Liu, S. J., Haeggstrom, E. O., Khuri-Yakub, B. T.  
2005; 31 (9): 1265-1277
  - **Capacitive micromachined ultrasonic transducer design for high power transmission** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*  
Bayram, B., Oralkan, O., Ergun, A. S., Haeggstrom, E.  
2005; 52 (2): 326-39
  - **3-D ultrasound imaging using forward viewing CMUT ring arrays for intravascular and intracardiac applications** *IEEE International Ultrasonics Symposium*  
Yeh, D. T., Oralkan, O., Wygant, I. O., O'Donnell, M., Khuri-Yakub, B. T.  
IEEE.2005: 783-786
  - **Reconfigurable Arrays for portable ultrasound** *IEEE International Ultrasonics Symposium*  
Fisher, R., Thomenius, K., WODNICKI, R., Thomas, R., Khuri-Yakub, B., Ergun, A., Yaralioglu, G.  
IEEE.2005: 495-499
  - **An endoscopic imaging system based on a two-dimensional CMUT array: Real-time imaging results** *IEEE International Ultrasonics Symposium*  
Wygant, I. O., Zhuang, X., Yeh, D. T., Vaithilingam, S., Nikoozadeh, A., Oralkan, O., Ergun, A. S., Karaman, M., Khuri-Yakub, B. T.  
IEEE.2005: 792-795
  - **High-frequency CMUT arrays for high-resolution medical imaging** *Medical Imaging 2005 Conference*  
Yeh, D. T., Oralkan, O., Ergun, A. S., Zhuang, X. F., Wygant, I. O., Khuri-Yakub, B. T.  
SPIE-INT SOC OPTICAL ENGINEERING.2005: 87-98
  - **Photoacoustic imaging using a two-dimensional CMUT array** *IEEE International Ultrasonics Symposium*  
Wygant, I. O., Zhuang, X., Kuo, P. S., Yeh, D. T., Oralkan, O., Khuri-Yakub, B. T.  
IEEE.2005: 1921-1924
  - **Characterization of cross-coupling in capacitive micromachined ultrasonic transducers** *IEEE International Ultrasonics Symposium*  
Bayram, B., Kupnik, M., Yaralioglu, G. G., Oralkan, O., Lin, D. S., Zhuang, X. F., Ergun, A. S., Sarioglu, A. F., Wong, S. H., Khuri-Yakub, B. T.  
IEEE.2005: 601-604
  - **A miniature real-time volumetric ultrasound imaging system** *Medical Imaging 2005 Conference*  
Wygant, I. O., Yeh, D. T., Zhuang, X. F., Nikoozadeh, A., Oralkan, O., Ergun, A. S., Karaman, M., Khuri-Yakub, B. T.  
SPIE-INT SOC OPTICAL ENGINEERING.2005: 26-36
  - **Finite element modeling of capacitive micromachined ultrasonic transducers** *Medical Imaging 2005 Conference*  
Yaralioglu, G. G., Bayram, B., Nikoozadeh, A., Khuri-Yakub, B. T.  
SPIE-INT SOC OPTICAL ENGINEERING.2005: 77-86
  - **Capacitive micromachined ultrasonic transducer technology for medical ultrasound imaging** *Medical Imaging 2005 Conference*



Ergun, A. S., Zhuang, X., Huang, Y., Oralkan, O., Yaralioglu, G. G., Khuri-Yakub, B. T.  
SPIE-INT SOC OPTICAL ENGINEERING.2005: 58–68

- **Two-dimensional capacitive micromachined ultrasonic transducer (CMUT) arrays for a miniature integrated volumetric ultrasonic imaging system** *Medical Imaging 2005 Conference*  
Zhuang, X., Wygant, I. O., Yeh, D. T., Nikoozadeh, A., Oralkan, O., Ergun, A. S., Cheng, C. H., Huang, Y., Yaralioglu, G. G., Khuri-Yakub, B. T.  
SPIE-INT SOC OPTICAL ENGINEERING.2005: 37–46
- **Capacitive micromachined ultrasonic transducer design for high power transmission** *Ultrasonics, Ferroelectrics and Frequency Control, IEEE Transactions on*  
Bayram, B., Oralkan, O., Ergun, A., S., Haeggstrom, E., Yaralioglu, G., G., Khuri-Yakub, B., T.  
2005; 52 (2): 326-339
- **Coherent array imaging using phased subarrays. Part II: Simulations and experimental results** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*  
Johnson, J. A., Oralkan, O., Ergun, S., Demirci, U., Karaman, M., Khuri-Yakub, B. T.  
2005; 52 (1): 51-64
- **Capacitive micromachined ultrasonic transducers (CMUTs) with piston-shaped membranes** *IEEE International Ultrasonics Symposium*  
Huang, Y. L., Haeggstrom, E. O., Zhuang, X. F., Ergun, A. S., Khuri-Yakub, B. T.  
IEEE.2005: 589–592
- **Coherent-array imaging using phased subarrays. Part I: Basic principles** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*  
Johnson, J. A., Karaman, M., Khuri-Yakub, B. T.  
2005; 52 (1): 37-50
- **Integrated ultrasound imaging systems based on capacitive micromachined ultrasonic transducer arrays** *4th IEEE Conference on Sensors*  
Wygant, I. O., Yeh, D. T., Zhuang, X. F., Vaithilingam, S., Nikoozadeh, A., Oralkan, O., Ergun, A. S., Yaralioglu, G. G., Khuri-Yakub, B. T.  
IEEE.2005: 704–707
- **High-resolution imaging with high-frequency 1-D linear CMUT arrays** *IEEE International Ultrasonics Symposium*  
Yeh, D. T., Oralkan, O., Wygant, I. O., Ergun, A. S., Wong, J. H., Khuri-Yakub, B. T.  
IEEE.2005: 665–668
- **Acoustically actuated flexensional SixNy and single-crystal silicon 2-D micromachined ejector arrays** *IEEE TRANSACTIONS ON SEMICONDUCTOR MANUFACTURING*  
Demirci, U., Yaralioglu, G. G., Haeggstrom, E., Percin, G., Ergun, S., Khuri-Yakub, B. T.  
2004; 17 (4): 517-524
- **Wideband micromachined capacitive microphones with radio frequency detection** *JOURNAL OF THE ACOUSTICAL SOCIETY OF AMERICA*  
Hansen, S. T., Ergun, A. S., Liou, W., Auld, B. A., Khuri-Yakub, B. T.  
2004; 116 (2): 828-842
- **Forward-viewing CMUT arrays for medical Imaging** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*  
Demirci, U., Ergun, A. S., Oralkan, O., Karaman, M., Khuri-Yakub, B. T.  
2004; 51 (7): 887-895
- **Ultrasonic mixing in microfluidic channels using integrated transducers** *ANALYTICAL CHEMISTRY*  
Yaralioglu, G. G., Wygant, I. O., Marentis, T. C., Khuri-Yakub, B. T.  
2004; 76 (13): 3694-3698
- **Optimized membrane configuration improves CMUT performance** *IEEE Ultrasonics Symposium*  
Huang, Y. L., Haeggstrom, E. O., Zhuang, X. F., Ergun, A. S., Khuri-Yakub, B. T.  
IEEE.2004: 505–508
- **CMUT ring arrays for forward-looking intravascular imaging** *IEEE Ultrasonics Symposium*  
Oralkan, O., Hansen, S. T., Bayram, B., Yaralioglu, G. G., Ergun, A. S., Khuri-Yakub, B. T.  
IEEE.2004: 403–406
- **Integrated ultrasonic imaging systems based on CMUT arrays: Recent progress** *IEEE Ultrasonics Symposium*

- Wygant, I. O., Zhuang, X., Yeh, D. T., Nikoozadeh, A., Oralkan, O., Ergun, A. S., Karaman, M., Khuri-Yakub, B. T.  
IEEE.2004: 391–394
- **Analytical calculation of collapse voltage of CMUT membrane** *IEEE Ultrasonics Symposium*  
Nikoozadeh, A., Bayram, B., Yaralioglu, G. G., Khuri-Yakub, B. T.  
IEEE.2004: 256–259
  - **Micromachined ultrasonic transducers and their use for 2D and 3D imaging** *27th International Symposium on Acoustical Imaging*  
Khuri-Yakub, B. T., Ergun, A. S., Huang, Y., Cheng, C. H., Oralkan, O., Johnson, J., Yaralioglu, G. G., Karaman, M.  
SPRINGER.2004: 1–9
  - **Dynamic FEM analysis of multiple cMUT cells in immersion** *IEEE Ultrasonics Symposium*  
Bayram, B., Yaralioglu, G. G., Ergun, A. S., Oralkan, O., Khuri-Yakub, B. T.  
IEEE.2004: 252–255
  - **Capacitive micromachined ultrasonic transducers (CMUTs) with isolation posts** *IEEE Ultrasonics Symposium*  
Huang, Y. L., Haeggstrom, E. O., Zhuang, X. F., Ergun, A. S., Khuri-Yakub, B. T.  
IEEE.2004: 2223–2226
  - **Volumetric ultrasound Imaging using 2-D CMUT arrays** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*  
Oralkan, O., Ergun, A. S., Cheng, C. H., Johnson, J. A., Karaman, M., Lee, T. H., Khuri-Yakub, B. T.  
2003; 50 (11): 1581-1594
  - **A new regime for operating capacitive micromachined ultrasonic transducers** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*  
Bayram, B., Haeggstrom, E., Yaralioglu, G. G., Khuri-Yakub, B. T.  
2003; 50 (9): 1184-1190
  - **Capacitive micromachined ultrasonic lamb wave transducers using rectangular membranes** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*  
Badi, M. H., Yaralioglu, G. G., Ergun, A. S., Hansen, S. T., Wong, E. J., Khuri-Yakub, B. T.  
2003; 50 (9): 1191-1203
  - **Photoresist deposition without spinning** *IEEE TRANSACTIONS ON SEMICONDUCTOR MANUFACTURING*  
Percin, G., Khuri-Yakub, B. T.  
2003; 16 (3): 452-459
  - **Fabricating capacitive micromachined ultrasonic transducers with wafer-bonding technology** *JOURNAL OF MICROELECTROMECHANICAL SYSTEMS*  
Huang, Y. L., Ergun, A. S., Haeggstrom, E., Badi, M. H., Khuri-Yakub, B. T.  
2003; 12 (2): 128-137
  - **Capacitive micromachined ultrasonic transducers: Theory and technology** *JOURNAL OF AEROSPACE ENGINEERING*  
Ergun, A. S., Yaralioglu, G. G., Khuri-Yakub, B. T.  
2003; 16 (2): 76-84
  - **Calculation and measurement of electromechanical coupling coefficient of capacitive micromachined ultrasonic transducers** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*  
Yaralioglu, G. G., Ergun, A. S., Bayram, B., Haeggstrom, E., Khuri-Yakub, B. T.  
2003; 50 (4): 449-456
  - **Piezoelectric droplet ejector for ink-jet printing of fluids and solid particles** *REVIEW OF SCIENTIFIC INSTRUMENTS*  
Percin, G., Khuri-Yakub, B. T.  
2003; 74 (2): 1120-1127
  - **Collapsed regime operation of capacitive micromachined ultrasonic transducers based on wafer-bonding technique** *IEEE International Ultrasonics Symposium*  
Huang, Y., Haeggstrom, E., Bayram, B., Zhuang, X., Ergun, A. S., Cheng, C. H., Khuri-Yakub, B. T.  
IEEE.2003: 1161–1164
  - **Ultrasonic temperature control and measurement in micro-fluidic channels** *Conference on Microfluidics, BioMEMS, and Medical Microsystems*  
Jagannathan, H., Yaralioglu, G. G., Ergun, A. S., Khuri-Yakub, B. T.

SPIE-INT SOC OPTICAL ENGINEERING.2003: 243–247

- **Wideband micromachined acoustic sensors with radio frequency detection** *Conference on Unattended Ground Sensor Technologies and Applications V*  
Hansen, S. T., Ergun, A. S., Khuri-Yakub, B. T.  
SPIE-INT SOC OPTICAL ENGINEERING.2003: 42–50
- **Improved modeling and fabrication techniques for capacitive micromachined ultrasonic lamb wave transducers** *IEEE International Ultrasonics Symposium*  
Badi, M. H., Yaralioglu, G. G., Ergun, A. S., Huang, Y. L., Khuri-Yakub, B. T.  
IEEE.2003: 585–588
- **Micromachined fluid ejector arrays for biotechnological and biomedical applications** *20th IEEE International Conference on Robotics and Automation (ICRA)*  
Percin, G., Yaralioglu, G. G., Khuri-Yakub, B. T.  
IEEE.2003: 2892–2894
- **2D acoustically actuated micromachined droplet ejector array** *IEEE International Ultrasonics Symposium*  
Demirci, U., Yaralioglu, G. G., Haeggstrom, E., Percin, G., Khuri-Yakub, B. T.  
IEEE.2003: 1983–1986
- **Phased subarray imaging for low-cost, wideband coherent array imaging** *IEEE International Ultrasonics Symposium*  
Johnson, J. A., Oralkan, O., Ergun, A. S., Demirci, U., Karaman, M., Khuri-Yakub, B. T.  
IEEE.2003: 1875–1878
- **Improved equivalent circuit and finite element method modeling of capacitive micromachined ultrasonic transducers** *IEEE International Ultrasonics Symposium*  
Yaralioglu, G. G., Badi, M. H., Ergun, A. S., Khuri-Yakub, B. T., GINZTON, E. L.  
IEEE.2003: 469–472
- **Dynamic analysis of CMUTs in different regimes of operation** *IEEE International Ultrasonics Symposium*  
Bayram, B., Haeggstrom, E., Ergun, A. S., Yaralioglu, G. G., Khuri-Yakub, B. T.  
IEEE.2003: 481–484
- **Capacitive micromachined ultrasonic transducers for robotic sensing applications** *IEEE/RSJ International Conference on Intelligent Robots and Systems*  
Yaralioglu, G. G., Ergun, A. S., Huang, Y., Khuri-Yakub, B. T.  
IEEE.2003: 2347–2352
- **New fabrication process for capacitive micromachined ultrasonic transducers** *16th IEEE Annual International Conference on Micro Electro Mechanical Systems*  
Huang, Y., Ergun, A. S., Haeggstrom, E., Khuri-Yakub, B. T.  
IEEE.2003: 522–525
- **An implementation of a microfluidic mixer and switch using micromachined acoustic transducers** *16th IEEE Annual International Conference on Micro Electro Mechanical Systems*  
Jagannathan, H., Yaralioglu, G. G., Ergun, A. S., Khuri-Yakub, B. T.  
IEEE.2003: 104–107
- **Acoustic heating and thermometry in microfluidic channels** *16th IEEE Annual International Conference on Micro Electro Mechanical Systems*  
Jagannathan, H., Yaralioglu, G. G., Ergun, A. S., Khuri-Yakub, B. T.  
IEEE.2003: 474–477
- **Micromachined droplet ejector arrays** *REVIEW OF SCIENTIFIC INSTRUMENTS*  
Percin, G., Yaralioglu, G. G., Khuri-Yakub, B. T.  
2002; 73 (12): 4385–4389
- **Capacitive micromachined ultrasonic transducers: Next-generation arrays for acoustic imaging?** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*  
Oralkan, O., Ergun, A. S., Johnson, J. A., Karaman, M., Demirci, U., Kaviani, K., Lee, T. H., Khuri-Yakub, B. T.  
2002; 49 (11): 1596–1610
- **Piezoelectrically actuated flexensional micromachined ultrasound droplet ejectors** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*

- Percin, G., Khuri-Yakub, B. T.  
2002; 49 (6): 756-766
- **Piezoelectrically actuated flexensional micromachined ultrasound transducers - I: Theory** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*  
Percin, G., Khuri-Yakub, B. T.  
2002; 49 (5): 573-584
  - **Micromachined droplet ejector arrays for controlled ink-jet printing and deposition** *REVIEW OF SCIENTIFIC INSTRUMENTS*  
Percin, G., Khuri-Yakub, B. T.  
2002; 73 (5): 2193-2196
  - **Piezoelectrically actuated flexensional micromachined ultrasound transducers - II: Fabrication and experiments** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*  
Percin, G., Khuri-Yakub, B. T.  
2002; 49 (5): 585-595
  - **Piezoelectrically actuated flexensional micromachined ultrasound transducers** *1st Ultrasonics International Conference*  
Percin, G., Khuri-Yakub, B. T.  
ELSEVIER SCIENCE BV.2002: 441-48
  - **Finite element analysis of underwater capacitor micromachined ultrasonic transducers** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*  
Roh, Y., Khuri-Yakub, B. T.  
2002; 49 (3): 293-298
  - **Underwater acoustic imaging using capacitive micromachined ultrasonic transducer arrays** *MTS/IEEE Oceans 2002 Conference*  
Oralkan, O., Ergun, A. S., Cheng, C. H., Johnson, J. A., Karaman, M., Khuri-Yakub, B. T.  
IEEE.2002: 2354-2360
  - **Fabrication of capacitive micromachined ultrasonic transducers (CMUTs) using wafer bonding technology for low frequency (10 kHz-150 kHz) sonar applications** *MTS/IEEE Oceans 2002 Conference*  
Huang, Y., Ergun, A. S., Haeggstrom, E., Khuri-Yakub, B. T.  
IEEE.2002: 2322-2327
  - **Fabrication and characterization of 1-dimensional and 2-dimensional capacitive micromachined ultrasonic transducer (CMUT) arrays for 2-dimensional and volumetric ultrasonic imaging** *MTS/IEEE Oceans 2002 Conference*  
Ergun, A. S., Cheng, C. H., Demirci, U., Khuri-Yakub, B. T.  
IEEE.2002: 2361-2367
  - **Phased subarray processing for underwater 3D acoustic imaging** *MTS/IEEE Oceans 2002 Conference*  
Johnson, J. A., Karaman, M., Khuri-Yakub, B. T.  
IEEE.2002: 2145-2151
  - **Medical imaging using capacitive micromachined ultrasonic transducer arrays** *Ultrasonics*  
Johnson, J., A., Oralkan, O., Demirci, U., Ergun, S., Karaman, M., Khuri-Yakub, B., T.  
2002; 40: 471-476
  - **Medical imaging using capacitive micromachined ultrasonic transducer arrays** *Ultrasonics*  
Johnson, J., A., Oralkan, O., Demirci, U., Ergun, S., Karaman, M., Khuri-Yakub, B., T.  
2002; 40: 471-476
  - **Piezoelectrically actuated flexensional micromachined ultrasonic transducers** *Ultrasonics*  
Percin, G., Khuri-Yakub, B., T.  
2002; 40: 441-448
  - **Lamb wave devices based on Capacitive Micromachined Ultrasonic Transducers** *IEEE International Ultrasonic Symposium*  
Badi, M. H., Yaralioglu, G. G., Ergun, A. S., Hansen, S. T., Khuri-Yakub, B. T.  
IEEE.2002: 1031-1034
  - **Electrical through-wafer interconnects with sub-picofarad parasitic capacitance** *Microelectromechanical Systems Conference*

- Cheng, C. H., Ergun, A. S., Khuri-Yakub, B. T.  
IEEE.2002: 18–21
- **Volumetric imaging using 2D capacitive Micromachined Ultrasonic Transducer Arrays (CMUTs): Initial results** *IEEE International Ultrasonic Symposium*  
Oralkan, O., Ergun, A. S., Cheng, C. H., Johnson, J. A., Karaman, M., Lee, T. H., Khuri-Yakub, B. T.  
IEEE.2002: 1083–1086
  - **Broadband capacitive micromachined ultrasonic transducers ranging from 10 kHz to 60 MHz for imaging arrays and more** *IEEE International Ultrasonic Symposium*  
Ergun, A. S., Huang, Y., Cheng, C. H., Oralkan, O., Johnson, J., Jagannathan, H., Demirci, U., Yaralioglu, G. G., Karaman, M., Khuri-Yakub, B. T.  
IEEE.2002: 1039–1043
  - **Characterization of one-dimensional capacitive micromachined ultrasonic immersion transducer arrays** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*  
Jin, X. C., Oralkan, O., Degertekin, F. L., Khuri-Yakub, B. T.  
2001; 48 (3): 750-760
  - **Improved modeling and design of microphones using radio frequency detection with capacitive micromachined ultrasonic transducers** *IEEE International Ultrasonic Symposium*  
Hansen, S. T., Ergun, A. S., Khuri-Yakub, B. T.  
IEEE.2001: 961–964
  - **Micromachined piezoelectrically actuated flexensional transducers for high resolution printing and imaging** *IEEE International Ultrasonic Symposium*  
Percin, G., Khuri-Yakub, B. T.  
IEEE.2001: 921–924
  - **Micromachined piezoelectrically actuated flexensional transducers for high resolution printing** *International Conference on Digital Printing Technologies SOCIETY IMAGING SCIENCE TECHNOLOGY*.2001: 673–676
  - **Acoustic sensing using radio micromachined frequency detection and capacitive ultrasonic transducers** *IEEE MTT-S International Microwave Symposium*  
Hansen, S. T., Ergun, A. S., Khuri-Yakub, B. T.  
IEEE.2001: 2243–2246
  - **Piezoelectrically actuated flexensional MUTs** *IEEE International Ultrasonic Symposium*  
Percin, G., Khuri-Yakub, B. T.  
IEEE.2001: 903–906
  - **Micro-fluidic channels with integrated ultrasonic transducers** *IEEE International Ultrasonic Symposium*  
Jagannathan, H., Yaralioglu, G. G., Ergun, A. S., Degertekin, F. L., Khuri-Yakub, B. T.  
IEEE.2001: 859–862
  - **Influence of the electrode size and location on the performance of a CMUT** *IEEE International Ultrasonic Symposium*  
Bayram, B., Yaralioglu, G. G., Ergun, A. S., Khuri-Yakub, B. T.  
IEEE.2001: 949–952
  - **Residual stress and Young's modulus measurement of capacitive micromachined ultrasonic transducer membranes** *IEEE International Ultrasonic Symposium*  
Yaralioglu, G. G., Ergun, A. S., Bayram, B., Marentis, T., Khuri-Yakub, B. T.  
IEEE.2001: 953–956
  - **Lamb wave devices using capacitive micromachined ultrasonic transducers** *APPLIED PHYSICS LETTERS*  
Yaralioglu, G. G., Badi, M. H., Ergun, A. S., Cheng, C. H., Khuri-Yakub, B. T., Degertekin, F. L.  
2001; 78 (1): 111-113
  - **Capacitive micromachined ultrasonic transducer arrays for medical imaging: Experimental results** *IEEE International Ultrasonic Symposium*  
Demirci, U., Oralkan, O., Johnson, J. A., Ergun, A. S., Karaman, M., Khuri-Yakub, B. T.  
IEEE.2001: 957–960
  - **A novel parametric-effect MEMS amplifier** *JOURNAL OF MICROELECTROMECHANICAL SYSTEMS*  
Raskin, J. P., Brown, A. R., Khuri-Yakub, B. T., Rebeiz, G. M.

2000; 9 (4): 528-537

- **Silicon micromachined ultrasonic transducers** *20th Memorial Symposium on Ultrasonic Electronics (USE 99)*  
Khuri-Yakub, B. T., Cheng, C. H., Degertekin, F. L., Ergun, S., Hansen, S., Jin, X. C., Oralkan, O.  
JAPAN SOC APPLIED PHYSICS.2000: 2883–87
- **Initial pulse-echo imaging results with one-dimensional capacitive micromachined ultrasonic transducer arrays** *IEEE Ultrasonics Symposium*  
Oralkan, O., Jin, X. C., Kaviani, K., Ergun, A. S., Degertekin, F. L., Karaman, M., Khuri-Yakub, B. T.  
IEEE.2000: 959–962
- **A first experimental verification of micromachined capacitive lamb wave transducers** *IEEE Ultrasonics Symposium*  
Badi, M. H., Yeralioglu, G. G., Ergun, A. S., Degertekin, F. L., Cheng, C. H., Khuri-Yakub, B. T.  
IEEE.2000: 311–314
- **Finite element method and normal mode modeling of capacitive micromachined SAW and Lamb wave transducers** *IEEE Ultrasonics Symposium*  
Yeralioglu, G. G., Degertekin, F. L., Badi, M. H., Auld, B. A., Khuri-Yakub, B. T.  
IEEE.2000: 129–132
- **Finite element modeling of capacitor micromachined ultrasonic transducers** *IEEE Ultrasonics Symposium*  
Roh, Y., Khuri-Yakub, B. T.  
IEEE.2000: 905–908
- **Characterization of capacitive micromachined ultrasonic transducers in air using optical measurements** *IEEE Ultrasonics Symposium*  
Hansen, S. T., Turo, A., Degertekin, F. L., Khuri-Yakub, B. T.  
IEEE.2000: 947–950
- **An efficient electrical addressing method using through-wafer vias for two-dimensional ultrasonic arrays** *IEEE Ultrasonics Symposium*  
Cheng, C. H., Chow, E. M., Jin, X. C., Ergun, S., Khuri-Yakub, B. T.  
IEEE.2000: 1179–1182
- **Micromachined piezoelectrically actuated flexensional transducers for high resolution printing** *International Conference on Digital Printing Technologies*  
Percin, G., Khuri-Yakub, B. T.  
SOCIETY IMAGING SCIENCE TECHNOLOGY.2000: 68–68
- **RF detection for low frequency cMUTS and its comparison to traditional detection** *IEEE Ultrasonics Symposium*  
Ergun, A. S., Hansen, S. T., Khuri-Yakub, B. T.  
IEEE.2000: 935–938
- **Theory and analysis of electrode size optimization for capacitive microfabricated ultrasonic transducers** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*  
Bozkurt, A., Ladabaum, I., Atalar, A., Khuri-Yakub, B. T.  
1999; 46 (6): 1364-1374
- **Ultrasonic sensor for photoresist process monitoring** *IEEE TRANSACTIONS ON SEMICONDUCTOR MANUFACTURING*  
Morton, S. L., Degertekin, F. L., Khuri-Yakub, B. T.  
1999; 12 (3): 332-339
- **Controlled ink-jet printing and deposition of organic polymers and solid particles (vol 19, pg 2375, 1998)** *APPLIED PHYSICS LETTERS*  
Percin, G., Lundgren, T. S., Khuri-Yakub, B. T.  
1999; 74 (10): 1498-1498
- **Fabrication and characterization of surface micromachined capacitive ultrasonic immersion transducers** *JOURNAL OF MICROELECTROMECHANICAL SYSTEMS*  
Jin, X. C., Ladabaum, I., Degertekin, F. L., Calmes, S., Khuri-Yakub, B. T.  
1999; 8 (1): 100-114
- **Simulation and experimental characterization of a 2-D, 3-MHZ capacitive micromachined ultrasonic transducer (CMUT) array element** *1999 IEEE Ultrasonics International Symposium*  
Oralkan, O., Jin, X. C., Degertekin, F. L., Khuri-Yakub, B. T.  
IEEE.1999: 1141–1144

- **Air-coupled nondestructive evaluation using micromachined ultrasonic transducers** *1999 IEEE Ultrasonics International Symposium*  
Hansen, S. T., Mossawir, B. J., Ergun, A. S., Degertekin, F. L., Khuri-Yakub, B. T.  
IEEE.1999: 1037–1040
- **Micromachined ultrasonic transducers for air-coupled non-destructive evaluation** *Conference on Nondestructive Evaluation of Aging Aircraft, Airports, and Aerospace Hardware III*  
Hansen, S. T., Degertekin, F. L., Khuri-Yakub, B. T.  
SPIE - INT SOC OPTICAL ENGINEERING.1999: 310–318
- **Highly integrated 2-D capacitive micromachined ultrasonic transducers** *1999 IEEE Ultrasonics International Symposium*  
Calmes, S., Cheng, C. H., Degertekin, F. L., Jin, X. C., Ergun, S., Khuri-Yakub, B. T.  
IEEE.1999: 1163–1166
- **Ultrasonic monitoring of photoresist processing** *Conference on Metrology, Inspection, and Process Control for Microlithography XIII*  
Morton, S. L., Degertekin, F. L., Khuri-Yakub, B. T.  
SPIE-INT SOC OPTICAL ENGINEERING.1999: 340–347
- **Recent progress in capacitive micromachined ultrasonic immersion transducer array** *8th International Symposium on Integrated Circuits, Devices and Systems (ISIC-99)*  
Jin, X. C., Cheng, C. H., Oralkan, O., Calmes, S., Degertekin, F. L., Khuri-Yakub, B. T.  
NANYANG TECHNOLOGICAL UNIV.1999: 159–162
- **Controlled ink-jet printing and deposition of organic polymers and solid particles** *APPLIED PHYSICS LETTERS*  
Percin, G., Lundgren, T. S., Khuri-Yakub, B. T.  
1998; 73 (16): 2375-2377
- **In situ ultrasonic monitoring of photoresist development** *APPLIED PHYSICS LETTERS*  
Morton, S. L., Degertekin, F. L., Khuri-Yakub, B. T.  
1998; 73 (15): 2215-2217
- **The microfabrication of capacitive ultrasonic transducers** *JOURNAL OF MICROELECTROMECHANICAL SYSTEMS*  
Jin, X. C., Ladabaum, I., Khuri-Yakub, B. T.  
1998; 7 (3): 295-302
- **Micromachinable ultrasonic leaky wave air transducers** *APPLIED PHYSICS LETTERS*  
Degertekin, F. L., Atalar, A., Khuri-Yakub, B. T.  
1998; 73 (6): 741-743
- **In situ ultrasonic measurement of photoresist glass transition temperature** *APPLIED PHYSICS LETTERS*  
Morton, S. L., Degertekin, F. L., Khuri-Yakub, B. T.  
1998; 72 (19): 2457-2459
- **Surface micromachined capacitive ultrasonic transducers** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*  
Ladabaum, I., Jin, X. C., Soh, H. T., Atalar, A., Khuri-Yakub, B. T.  
1998; 45 (3): 678-690
- **Micromachined two-dimensional array piezoelectrically actuated transducers** *APPLIED PHYSICS LETTERS*  
Percin, G., Atalar, A., Degertekin, F. L., Khuri-Yakub, B. T.  
1998; 72 (11): 1397-1399
- **Miniature drumheads: microfabricated ultrasonic transducers** *17th Ultrasonics International Conference (UI 97)*  
Ladabaum, I., Jin, X. C., Khuri-Yakub, B. T.  
ELSEVIER SCIENCE BV.1998: 25–29
- **Recent progress in surface micromachined capacitive ultrasonic transducers** *5th International Conference on Solid-State and Integrated Circuit Technology*  
Jin, X. C., Ladabaum, I., Degertekin, F. L., Calmes, S., Khuri-Yakub, B. T.  
IEEE.1998: 880–883
- **Silicon micromachined ultrasonic transducers** *1998 IEEE Ultrasonics Symposium*  
Khuri-Yakub, B. T., Degertekin, F. L., Jin, X. C., Calmes, S., Ladabaum, I., Hansen, S., Zhang, X. J.

IEEE.1998: 985–991

- **Ultrasonic cure and temperature monitoring of photoresist during pre-exposure bake process** *Conference on Metrology, Inspection, and Process Control for Microlithography XII*  
Morton, S. L., Degertekin, F. L., Khuri-Yakub, B. T.  
SPIE - INT SOC OPTICAL ENGINEERING.1998: 254–261
- **Micromachined capacitive immersion ultrasonic transducers** *Conference on Ultrasonic Transducer Engineering - Medical Imaging 1998*  
Khuri-Yakub, B. T., Jin, X. C., Ladabaum, I., Degertekin, F. L.  
SPIE - INT SOC OPTICAL ENGINEERING.1998: 237–241
- **Defect imaging by micromachined ultrasonic air transducers** *1998 IEEE Ultrasonics Symposium*  
Hansen, S., Irani, N., Degertekin, F. L., Ladabaum, I., Khuri-Yakub, B. T.  
IEEE.1998: 1003–1006
- **Analytic modeling of loss and cross-coupling in capacitive micromachined ultrasonic transducers** *1998 IEEE Ultrasonics Symposium*  
Bozkurt, A., Degertekin, F. L., Atalar, A., Khuri-Yakub, B. T.  
IEEE.1998: 1025–1028
- **Surface micromachined capacitive ultrasonic immersion transducers** *11th Annual International Workshop on Micro Electro Mechanical Systems*  
Jin, X. C., Ladabaum, I., Khuri-Yakub, B. T.  
IEEE.1998: 649–654
- **Resist deposition without spinning by using novel inkjet technology and direct lithography for MEMS** *15th Annual SPIE Conference on Advances in Resist Technology and Processing*  
Percin, G., Sob, T. H., Khuri-Yakub, B. T., GINZTON, E. L.  
SPIE-INT SOC OPTICAL ENGINEERING.1998: 1382–1389
- **Micromachined capacitive ultrasonic immersion transducer for medical imaging** *10th Annual International Conference of the IEEE-Engineering-in-Medicine-and-Biology-Society*  
Jin, X. C., Khuri-Yakub, B. T., Degertekin, F. L., Ladabaum, I., Calmes, S.  
IEEE.1998: 779–782
- **Micromachined capacitive transducer arrays for medical ultrasound imaging** *1998 IEEE Ultrasonics Symposium*  
Jin, X. C., Degertekin, F. L., Calmes, S., Zhang, X. J., Ladabaum, I., Khuri-Yakub, B. T.  
IEEE.1998: 1877–1880
- **Control of a drop-ejector used as photo-resist dispenser** *SPIE Conference on Mathematics and Control in Smart Structures*  
Roche, P. E., Hansson, A., Khuri-Yakub, B. T.  
SPIE-INT SOC OPTICAL ENGINEERING.1998: 446–454
- **Micromachined 2-D array piezoelectrically actuated flexensional transducers: New designs** *Micromachined Devices and Components IV*  
Percin, G., Khuri-Yakub, B. T.  
SPIE-INT SOC OPTICAL ENGINEERING.1998: 411–414
- **Piezoelectrically actuated droplet ejector** *REVIEW OF SCIENTIFIC INSTRUMENTS*  
Percin, G., Levin, L., Khuri-Yakub, B. T.  
1997; 68 (12): 4561-4563
- **Controlled two-step solid-phase crystallization for high-performance polysilicon TFT's** *IEEE ELECTRON DEVICE LETTERS*  
Subramanian, V., Dankoski, P., Degertekin, L., KHURIYAKUB, B. T., Saraswat, K. C.  
1997; 18 (8): 378-381
- **Lamb wave excitation by Hertzian contacts with applications in NDE** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*  
Degertekin, F. L., KHURIYAKUB, B. T.  
1997; 44 (4): 769-779
- **In situ monitoring of crystallinity and temperature during rapid thermal crystallization of silicon on glass** *JOURNAL OF THE ELECTROCHEMICAL SOCIETY*  
Subramanian, V., Degertekin, F. L., Dankoski, P., KHURIYAKUB, B. T., Saraswat, K. C.



1997; 144 (6): 2216-2221

- **Analysis of micro machinable piezoelectrically driven one dimensional flexural transducers** *1997 IEEE Ultrasonics Symposium*  
RONNEKLEIV, A., Roche, P. E., Khuri-Yakub, B. T.  
I E E E.1997: 1061–1065
- **Plate thickness and transducer distance dual inversion with dry contact ultrasonic Lamb wave transducers** *1997 IEEE Ultrasonics Symposium*  
Pei, J., Khuri-Yakub, B. T.  
I E E E.1997: 1021–1024
- **Non-linear dynamics of flexural disc transducers** *1997 IEEE Ultrasonics Symposium*  
Roche, P. M., Khuri-Yakub, B. T.  
I E E E.1997: 971–974
- **Micromachinable leaky wave air transducers** *1997 IEEE Ultrasonics Symposium*  
Degertekin, L., Atalar, A., Khuri-Yakub, B. T.  
I E E E.1997: 975–978
- **The microfabrication of capacitive ultrasonic transducers** *9th International Conference on Solid-State Sensors and Actuators*  
Jin, X. C., Ladabaum, I., KHURIYAKUB, B. T.  
IEEE.1997: 437–440
- **Ultrasonic cure monitoring of photoresist during pre-exposure bake process** *1997 IEEE Ultrasonics Symposium*  
Morton, S. L., Degertekin, F. L., Khuri-Yakub, B. T.  
I E E E.1997: 837–840
- **A novel technique for in-situ monitoring of crystallinity and temperature during rapid thermal annealing of thin Si/Si-Ge films on quartz/glass** *Symposium on Flat Panel Display Materials II, at the 1996 MRS Spring Meeting*  
Subramanian, V., Degertekin, F. L., Dankoski, P., KHURIYAKUB, B. T., Saraswat, K. C.  
MATERIALS RESEARCH SOCIETY.1997: 267–272
- **Controlled two-step solid-phase crystallization for high-performance polysilicon TFT's** *Electron Device Letters, IEEE*  
Subramanian, V., Dankoski, P., Degertekin, L., Khuri-Yakub, B., T., Saraswat, K., C.  
1997; 18 (8): 378-381
- **Lamb wave excitation by Hertzian contacts with applications in NDE** *Ultrasonics, Ferroelectrics and Frequency Control, IEEE Transactions on*  
Degertekin, F., L., Khuri-Yakub, B., T.  
1997; 44 (4): 769-779
- **In Situ Monitoring of Crystallinity and Temperature During Rapid Thermal Crystallization of Silicon on Glass** *J. Electrochem. Soc.*  
Subramanian, V., Degertekin, F., L., Dankoski, P., Khuri-Yakub, B., T., Saraswat, K., C.  
1997; 144: 2216-2221
- **Micromachined 2-D array piezoelectrically actuated flextensional transducers** *1997 IEEE Ultrasonics Symposium*  
Percin, G., Khuri-Yakub, B. T.  
I E E E.1997: 959–962
- **Dry contact ultrasonic sensors for structural monitoring** *International Workshop on Structural Health Monitoring*  
Khuri-Yakub, B. T., Degertekin, F. L., Pei, J.  
TECHNOMIC PUBL CO INC.1997: 481–491
- **An improved circuit model of MUTs** *1997 IEEE Ultrasonics Symposium*  
RONNEKLEIV, A., Ladabaum, I., Jin, X. C., Khuri-Yakub, B. T.  
I E E E.1997: 395–399
- **Air coupled through transmission of aluminum and other recent results using MUTs** *1997 IEEE Ultrasonics Symposium*  
Ladabaum, I., Jin, X. C., Khuri-Yakub, B. T.  
I E E E.1997: 983–986
- **Silicon micromachined ultrasonic immersion transducers** *APPLIED PHYSICS LETTERS*  
Soh, H. T., Ladabaum, I., Atalar, A., Quate, C. F., KHURIYAKUB, B. T.

1996; 69 (24): 3674-3676

- **Single mode lamb wave excitation in thin plates by Hertzian contacts** *APPLIED PHYSICS LETTERS*  
Degertekin, F. L., KHURIYAKUB, B. T.  
1996; 69 (2): 146-148
- **Temperature measurement in rapid thermal processing using the acoustic temperature sensor** *IEEE TRANSACTIONS ON SEMICONDUCTOR MANUFACTURING*  
Lee, Y. J., KHURIYAKUB, B. T., Saraswat, K.  
1996; 9 (1): 115-121
- **Modeling, measurement and control of rapid thermal processing** *1st Meeting on Transient Thermal Processing Techniques in Electronic Materials at the 1996 TMS Annual Meeting*  
Saraswat, K. C., Chen, Y. H., Khuri-Yakub, B. T.  
MINERALS, METALS & MATERIALS SOC.1996: 3-10
- **Ultrasonic monitoring of photoresist prebake using TOF measurement** *1996 IEEE Ultrasonic Symposium*  
Morton, S. L., Hansson, A., KHURIYAKUB, B. T.  
I E E E.1996: 1013-1016
- **In situ simultaneous measurement of temperature and thin film thickness with ultrasonic techniques** *1996 IEEE Ultrasonic Symposium*  
Pei, J., KHURIYAKUB, B. T., Degertekin, F. L., HONEIN, B. V., STANKE, F. E., Saraswat, K. C.  
I E E E.1996: 1039-1042
- **Piezoelectrically actuated transducer and droplet ejector** *1996 IEEE Ultrasonic Symposium*  
Percin, G., Levin, L., KHURIYAKUB, B. T.  
I E E E.1996: 913-916
- **Application of surface impedance approach to ultrasonic wave propagation in layered anisotropic media** *1996 IEEE Ultrasonic Symposium*  
Degertekin, F. L., HONEIN, B. V., KHURIYAKUB, B. T.  
I E E E.1996: 559-562
- **Erosion/corrosion monitoring with dry contact ultrasonic lamb wave transducers** *Conference on Nondestructive Evaluation of Aging Aircraft, Airports, and Aerospace Hardware*  
Pei, J., Degertekin, F. L., HONEIN, B. V., KHURIYAKUB, B. T.  
SPIE - INT SOC OPTICAL ENGINEERING.1996: 428-435
- **In situ simultaneous measurement of temperature and thin film thickness with ultrasonic techniques** *Conference on Nondestructive Evaluation for Process Control in Manufacturing*  
KHURIYAKUB, B. T., Pei, J., Degertekin, F. L., Saraswat, K. C.  
SPIE - INT SOC OPTICAL ENGINEERING.1996: 131-135
- **Microfabricated ultrasonic transducers: Towards robust models and immersion devices** *1996 IEEE Ultrasonic Symposium*  
Ladabaum, I., Jin, X., Soh, H. T., Pierre, F., Atalar, A., KHURIYAKUB, B. T.  
I E E E.1996: 335-338
- **Hertzian contact transducers for nondestructive evaluation** *JOURNAL OF THE ACOUSTICAL SOCIETY OF AMERICA*  
Degertekin, F. L., KHURIYAKUB, B. T.  
1996; 99 (1): 299-308
- **A surface micromachined electrostatic ultrasonic air transducer** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*  
HALLER, M. I., KHURIYAKUB, B. T.  
1996; 43 (1): 1-6
- **Lamb wave tomography and its application in pipe erosion/corrosion monitoring** *RESEARCH IN NONDESTRUCTIVE EVALUATION*  
Pei, J., Yousuf, M. I., Degertekin, F. L., HONEIN, B. V., KHURIYAKUB, B. T.  
1996; 8 (4): 189-197
- **Micromachined ultrasonic air-transducers (MUTs)** *International Conference on Micro-Engineering and Nano-Engineering 1995 (MNE 95)*  
Spoliansky, D., Ladabaum, I., KHURIYAKUB, B. T.

ELSEVIER SCIENCE BV.1996: 535–38

- **A surface micromachined electrostatic ultrasonic air transducer** *Ultrasonics, Ferroelectrics and Frequency Control, IEEE Transactions on*  
Haller, M., I., Khuri-Yakub, B., T.  
1996; 43 (1): 1-6
- **Single mode lamb wave excitation in thin plates by hertzian contacts** *Appl. Phys. Lett.*  
Degertekin, F., L., Khuri-Yakub, B., T.  
1996; 69: 146-148
- **Point Contact Ultrasonic Transducer of Waveguiding Structure for High-Freq. Operation** *Appl. Phys. Lett.*  
Yamada, K., Khuri-Yakub, B., T.  
1996; 68: 1335-1337
- **Hertzian contact transducers for nondestructive evaluation** *J. Acoustical Society of America*  
Degertekin, F., L., Khuri-Yakub, B., T.  
1996; 99: 299-308
- **Micromachined ultrasonic transducers: 11.4 MHz transmission in air and more** *APPLIED PHYSICS LETTERS*  
Ladabaum, I., KHURIYAKUB, B. T., Spoliansky, D.  
1996; 68 (1): 7-9
- **Plate tomography with dry contact lamb wave transducers** *22nd International Symposium on Acoustical Imaging*  
Pei, J., Yousuf, M. I., Degertekin, F. L., HONEIN, B. V., KHURIYAKUB, B. T.  
PLENUM PRESS DIV PLENUM PUBLISHING CORP.1996: 725–730
- **IN-SITU THIN-FILM THICKNESS MEASUREMENT WITH ACOUSTIC LAMB WAVES** *APPLIED PHYSICS LETTERS*  
Pei, J., Degertekin, F. L., KHURIYAKUB, B. T., Saraswat, K. C.  
1995; 66 (17): 2177-2179
- **Lamb wave tomography and its application in pipe erosion/corrosion monitoring** *1995 IEEE Ultrasonics Symposium*  
Pei, J., Yousuf, M. I., Degertekin, F. L., HONEIN, B. V., KHURIYAKUB, B. T.  
IEEE.1995: 795–798
- **In-situ thin film thickness measurement with acoustic lamb waves** *Appl. Phys. Lett.*  
Pei, J., Degertekin, F., L., Khuri-Yakub, B., T., Saraswat, K., C.  
1995; 66: 2177-2179
- **A new flexible rapid thermal processing system** *Materials-Research-Society Symposium on Modeling and Simulation of Thin-Film Processing*  
Saraswat, K. C., Chen, Y., Degertekin, L., KHURIYAKUB, B. T.  
MATERIALS RESEARCH SOC.1995: 307–319
- **A new flexible rapid thermal processing system** *1995 MRS Spring Meeting on Rapid Thermal and Integrated Processing*  
Saraswat, K. C., Chen, Y., Degertekin, L., KHURIYAKUB, B. T.  
MATERIALS RESEARCH SOC.1995: 35–47
- **Micromachined ultrasonic transducers (MUTs)** *1995 IEEE Ultrasonics Symposium*  
Ladabaum, I., KHURIYAKUB, B. T., Spoliansky, D., HALLER, M. I.  
IEEE.1995: 501–504
- **Efficient excitation and detection of lamb waves for process monitoring and NDE** *1995 IEEE Ultrasonics Symposium*  
Degertekin, F. L., HONEIN, B. V., KHURIYAKUB, B. T.  
IEEE.1995: 787–790
- **MICROMACHINED 1-3 COMPOSITES FOR ULTRASONIC AIR TRANSDUCERS** *REVIEW OF SCIENTIFIC INSTRUMENTS*  
HALLER, M. I., KHURIYAKUB, B. T.  
1994; 65 (6): 2095-2098
- **RAPID THERMAL MULTIPROCESSING FOR A PROGRAMMABLE FACTORY FOR ADAPTABLE MANUFACTURING OF ICS** *IEEE TRANSACTIONS ON SEMICONDUCTOR MANUFACTURING*

Saraswat, K. C., Apte, P. P., Booth, L., CHEN, Y. Z., DANKOSKI, P. C., Degertekin, F. L., Franklin, G. F., KHURIYAKUB, B. T., Moslehi, M. M., Schaper, C., GYUGYI, P. J., Lee, Y. J., Pei, et al  
1994; 7 (2): 159-175

- **TEMPERATURE-MEASUREMENT IN RAPID THERMAL-PROCESSING USING ACOUSTIC TECHNIQUES** *REVIEW OF SCIENTIFIC INSTRUMENTS*  
Lee, Y. J., KHURIYAKUB, B. T., Saraswat, K. C.  
1994; 65 (4): 974-976
- **IN-SITU ACOUSTIC TEMPERATURE TOMOGRAPHY OF SEMICONDUCTOR WAFERS** *APPLIED PHYSICS LETTERS*  
Degertekin, F. L., Pei, J., KHURIYAKUB, B. T., Saraswat, K. C.  
1994; 64 (11): 1338-1340
- **INSITU THIN FILM THICKNESS MEASUREMENT USING ULTRASONICS WAVES** *1994 IEEE Ultrasonics Symposium*  
Pei, J., Degertekin, F. L., HONEIN, B. V., KHURIYAKUB, B. T., Saraswat, K. C.  
I E E E.1994: 1237-1240
- **3D MODELING OF RAPID THERMAL PROCESSORS FOR DESIGN OPTIMIZATION OF A NEW FLEXIBLE RTP SYSTEM** *1994 IEEE International Electron Devices Meeting*  
CHEN, Y. Z., Booth, L., Schaper, C., KHURIYAKUB, B. T., Saraswat, K. C.  
IEEE.1994: 545-548
- **PROPAGATION IN FINITE ANISOTROPIC PLATES OF DIFFRACTING SCALAR WAVES** *1994 IEEE Ultrasonics Symposium*  
ROCHE, P. E., KHURIYAKUB, B. T.  
I E E E.1994: 679-682
- **TILTED SAMPLE ACOUSTIC MICROSCOPY FOR ANISOTROPY MEASUREMENT** *1994 IEEE Ultrasonics Symposium*  
Degertekin, F. L., HONEIN, B. V., KHURIYAKUB, B. T.  
I E E E.1994: 1433-1436
- **A SURFACE MICROMACHINED ELECTROSTATIC ULTRASONIC AIR TRANSDUCER** *1994 IEEE Ultrasonics Symposium*  
HALLER, M. I., KHURIYAKUB, B. T.  
I E E E.1994: 1241-1244
- **THIN FILM EFFECTS IN ULTRASONIC WAFER THERMOMETRY** *1994 IEEE Ultrasonics Symposium*  
Degertekin, F. L., Pei, J., HONEIN, B. V., KHURIYAKUB, B. T., Saraswat, K. C.  
I E E E.1994: 1337-1341
- **EFFECT OF SURFACE-TENSION ON THE ACOUSTIC RADIATION PRESSURE-INDUCED MOTION OF THE WATER AIR INTERFACE** *JOURNAL OF THE ACOUSTICAL SOCIETY OF AMERICA*  
CINBIS, C., Mansour, N. N., KHURIYAKUB, B. T.  
1993; 94 (4): 2365-2372
- **SCANNING ACOUSTIC MICROSCOPY** *ULTRASONICS*  
KHURIYAKUB, B. T.  
1993; 31 (5): 361-372
- **ONE-POINT CONTACT MEASUREMENT OF SPHERICAL RESONANCES** *APPLIED PHYSICS LETTERS*  
Hsieh, C. P., KHURIYAKUB, B. Y.  
1993; 62 (24): 3091-3093
- **IN-SITU ULTRASONIC THERMOMETRY OF SEMICONDUCTOR WAFERS** *IEEE 1993 Ultrasonics Symposium*  
Degertekin, F. L., Pei, J., Lee, Y. J., KHURIYAKUB, B. T., Saraswat, K. C.  
I E E E.1993: 375-377
- **OPTICAL PROBING OF SPHERICAL RESONANCE APPLIED TO SURFACE DEFECT INSPECTION** *19TH ANNUAL REVIEW OF PROGRESS IN QUANTITATIVE NONDESTRUCTIVE EVALUATION*  
Hsieh, C. P., KHURIYAKUB, B. T.  
PLENUM PRESS DIV PLENUM PUBLISHING CORP.1993: 1093-1098
- **HIGH-EFFICIENCY FRESNEL ACOUSTIC LENSES** *IEEE 1993 Ultrasonics Symposium*

Hadimioglu, B., RAWSON, E. G., Lujan, R., Lim, M., ZESCH, J. C., KHURIYAKUB, B. T., Quate, C. F.  
I E E E.1993: 579–582

- **HIGH-FREQUENCY ULTRASONIC TECHNIQUES** *Ultrasonics International Conference*  
Hadimioglu, B., KHURIYAKUB, B. T.  
BUTTERWORTH-HEINEMANN.1993: 559–562
- **IN-SITU TEMPERATURE MONITORING IN RTP BY ACOUSTICAL TECHNIQUES** *SYMP ON RAPID THERMAL AND INTEGRATED PROCESSING 2, AT THE 1993 SPRING MEETING OF THE MATERIALS RESEARCH SOC*  
Degertekin, F. L., Pei, J., Lee, Y. J., KHURIYAKUB, B. T., Saraswat, K. C.  
MATERIALS RESEARCH SOC.1993: 133–138
- **Effect of surface tension on the acoustic radiation pressure-induced motion of the water-air interface** *Journal of the Acoustical Society of America*  
Cinbis, C., Mansour, N., N., Khuri-Yakub, B., T.  
1993; 94 (4): 2365-72
- **Effect of surface tension on the acoustic radiation pressure-induced motion of the water-air interface** *Journal of the Acoustical Society of America*  
Cinbis, C., Mansour, N., N., Khuri-Yakub, B., T.  
1993; 94 (4): 2365-72
- **TAPERED ACOUSTIC MATCHING LAYERS** *IEEE 1993 Ultrasonics Symposium*  
HALLER, M. I., KHURIYAKUB, B. T.  
I E E E.1993: 505–508
- **MATERIAL CHARACTERIZATION USING HERTZIAN POINT-CONTACT TRANSDUCERS** *IEEE 1993 Ultrasonics Symposium*  
Degertekin, F. L., Pei, J., KHURIYAKUB, B. T.  
I E E E.1993: 297–299
- **COMPUTATION OF RIPPLE WAVE PARAMETERS - A COMPARISON OF METHODS** *JOURNAL OF GEOPHYSICAL RESEARCH-OCEANS*  
Fernandez, D. M., Vesecky, J. F., NAPOLITANO, D. J., KHURIYAKUB, B. T., Mann, J. A.  
1992; 97 (C4): 5207-5213
- **SURFACE DEFECT INSPECTION OF SPHERICAL OBJECTS BY THE RESONANT SPHERE TECHNIQUE** *APPLIED PHYSICS LETTERS*  
Hsieh, C. P., KHURIYAKUB, B. T.  
1992; 60 (15): 1815-1817
- **A NONCONTACTING TECHNIQUE FOR MEASURING SURFACE-TENSION OF LIQUIDS** *REVIEW OF SCIENTIFIC INSTRUMENTS*  
CINBIS, C., KHURIYAKUB, B. T.  
1992; 63 (3): 2048-2050
- **A noncontacting technique for measuring surface tension of liquids** *Review of Scientific Instruments*  
Cinbis, C., Khuri-Yakub, B., T.  
1992; 63 (3): 2048-2050
- **MICROMACHINED ACOUSTIC MATCHING LAYERS** *CONF ON NEW DEVELOPMENTS IN ULTRASONIC TRANSDUCERS AND TRANSDUCER SYSTEMS*  
HALLER, M. I., KHURIYAKUB, B. T.  
SPIE - INT SOC OPTICAL ENGINEERING.1992: 72–77
- **NEAR-FIELD ACOUSTIC MICROSCOPY** *CONF ON SCANNING MICROSCOPY INSTRUMENTATION*  
KHURIYAKUB, B. T., Akamine, S., Hadimioglu, B., YAMADA, H., Quate, C. F.  
SPIE - INT SOC OPTICAL ENGINEERING.1992: 30–39
- **ACOUSTIC INK PRINTING** *IEEE 1992 ULTRASONIC SYMP*  
Hadimioglu, B., Elrod, S. A., STEINMETZ, D. L., Lim, M., ZESCH, J. C., KHURIYAKUB, B. T., RAWSON, E. G., Quate, C. F.  
I E E E.1992: 929–935
- **SINGLE-POINT CONTACT MEASUREMENTS OF MECHANICAL RESONANCES** *IEEE 1992 ULTRASONIC SYMP*  
Hsieh, C. P., KHURIYAKUB, B. T.  
I E E E.1992: 787–789

- **ACOUSTIC INK PRINTING - PRINTING BY ULTRASONIC INK EJECTION** *8TH INTERNATIONAL CONGRESS ON ADVANCES IN NON-IMPACT PRINTING TECHNOLOGIES*  
Hadimioglu, B., Elrod, S. A., Lim, M., STEINMETZ, D. L., ZESCH, J. C., KHURIYAKUB, B. T., RAWSON, E. G., Quate, C. F.  
SOC IMAGING SCIENCE & TECHNOLOGY.1992: 411-415
- **1-3 COMPOSITES FOR ULTRASONIC AIR TRANSDUCERS** *IEEE 1992 ULTRASONIC SYMP*  
HALLER, M. I., KHURIYAKUB, B. T.  
I E E E.1992: 937-939
- **A noncontacting technique for measuring surface tension of liquids** *Review of Scientific Instruments*  
Cinbis, C., Khuri-Yakub, B., T.  
1992; 63 (3): 2048-2050
- **IMAGE-PROCESSING FOR A SCANNING ACOUSTIC MICROSCOPE THAT MEASURES AMPLITUDE AND PHASE** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*  
REINHOLDTSEN, P. A., KHURIYAKUB, B. T.  
1991; 38 (2): 141-147
- **Image processing for a scanning acoustic microscope that measures amplitude and phase** *Ultrasonics, Ferroelectrics and Frequency Control, IEEE Transactions on*  
Reinholdtsen, P., A., Khuri-Yakub, B., T.  
1991; 38 (2): 141-147
- **HIGH-FREQUENCY ULTRASONIC INSPECTION OF GREEN AND HIPPED SILICON-NITRIDE CYLINDRICAL SAMPLES** *SYMP ON NONDESTRUCTIVE EVALUATION AND MATERIAL PROPERTIES OF ADVANCED MATERIALS, AT THE 1991 ANNUAL MEETING OF THE MINERALS, METALS AND MATERIALS SOC*  
Fraser, J. D., Amin, K. E., KHURIYAKUB, B. T.  
MINERALS, METALS & MATERIALS SOC.1991: 1-4
- **MICROMACHINED ULTRASONIC MATERIALS** *1991 ULTRASONICS SYMP*  
HALLER, M. I., KHURIYAKUB, B. T.  
I E E E.1991: 403-405
- **NONCONTACTING ACOUSTICS-BASED TEMPERATURE-MEASUREMENT TECHNIQUES IN RAPID THERMAL-PROCESSING** *CONF ON RAPID THERMAL AND RELATED PROCESSING TECHNIQUES*  
Lee, Y. J., Chou, C. H., KHURIYAKUB, B. T., Saraswat, K. C.  
SPIE - INT SOC OPTICAL ENGINEERING.1991: 366-371
- **DEPOSITION OF HIGHLY ORIENTED LOW-STRESS ZNO FILMS** *1991 ULTRASONICS SYMP*  
ZESCH, J. C., Hadimioglu, B., KHURIYAKUB, B. T., Lim, M., Lujan, R., Ho, J., Akamine, S., Steinmetz, D., Quate, C. F., RAWSON, E. G.  
I E E E.1991: 445-448
- **NOVEL TECHNIQUE OF NDE IN CERAMIC BEARING BALLS** *1991 ULTRASONICS SYMP*  
Hsieh, C. P., Chou, C. H., KHURIYAKUB, B. T.  
I E E E.1991: 891-894
- **INSITU FILM THICKNESS AND TEMPERATURE MONITORING USING A 2 GHZ ACOUSTIC PHASE MEASUREMENT SYSTEM** *1991 ULTRASONICS SYMP*  
Bhardwaj, S., Mohan, S. S., DROZD, R. J., KHURIYAKUB, B. T., Saraswat, K. C.  
I E E E.1991: 965-967
- **NONINVASIVE SWITCHABLE ACOUSTOOPTIC TAPS FOR OPTICAL FIBER** *OPTICAL FIBER COMMUNICATIONS CONF ( OFC 90 )*  
Patterson, D. B., Howell, M. D., Digonnet, M., Kino, G. S., KHURIYAKUB, B. T.  
IEEE-INST ELECTRICAL ELECTRONICS ENGINEERS INC.1990: 1304-12
- **AMPLITUDE AND PHASE ACOUSTIC MICROSCOPE USING DIGITAL HETERODYNING** *REVIEW OF SCIENTIFIC INSTRUMENTS*  
REINHOLDTSEN, P. A., KHURIYAKUB, B. T.  
1990; 61 (4): 1236-1242
- **TEMPERATURE-MEASUREMENT OF SILICON-WAFERS USING PHOTOACOUSTIC TECHNIQUES** *1989 ANNUAL REVIEW OF PROGRESS IN QUANTITATIVE NONDESTRUCTIVE EVALUATION*

Lee, Y. J., Chou, C. H., KHURIYAKUB, B. T., Saraswat, K., MOSLEHI, M.  
PLENUM PRESS DIV PLENUM PUBLISHING CORP.1990: 1109-1114

- **HIGH-FREQUENCY ACOUSTOOPTIC MODE LOCKER FOR PICOSECOND PULSE GENERATION** *OPTICS LETTERS*  
Keller, U., Li, K. D., KHURIYAKUB, B. T., Bloom, D. M., Weingarten, K. J., Gerstenberger, D. C.  
1990; 15 (1): 45-47
- **SELECTIVE RATE ENHANCEMENT OF ETCHING PROCESSES BY ACOUSTIC AGITATION** *IEEE 1990 ULTRASONICS SYMP*  
Howell, M. D., KHURIYAKUB, B. T., Kino, G. S.  
I E E E.1990: 861-863
- **PROCESS MONITORING TECHNIQUES USING ACOUSTIC-WAVES** *IEEE 1990 ULTRASONICS SYMP*  
Bhardwaj, S., KHURIYAKUB, B. T., Saraswat, K. C.  
I E E E.1990: 367-369
- **RAPID THERMAL MULTIPROCESSING FOR MICRO FACTORIES** *CONF ON RAPID ISOTHERMAL PROCESSING*  
Saraswat, K. C., Booth, L., GROSSMAN, D. D., KHURIYAKUB, B. T., Lee, Y. J., Moslehi, M. M., Wood, S.  
SPIE - INT SOC OPTICAL ENGINEERING.1990: 2-14
- **FREQUENCY-SHIFTING IN OPTICAL FIBER USING A SAW HORN** *IEEE 1990 ULTRASONICS SYMP*  
Patterson, D. B., Dignonnet, M. J., Liu, A. C., KHURIYAKUB, B. T., Kino, G. S.  
I E E E.1990: 617-620
- **AMPLITUDE AND PHASE ACOUSTIC MICROSCOPY FOR CERAMIC BEARING BALL INSPECTIONS** *IEEE 1990 ULTRASONICS SYMP*  
Chou, C. H., Hsieh, C. P., KHURIYAKUB, B. T.  
I E E E.1990: 887-890
- **POLYMER-FILMS AS ACOUSTIC MATCHING LAYERS** *IEEE 1990 ULTRASONICS SYMP*  
Hadimioglu, B., KHURIYAKUB, B. T.  
I E E E.1990: 1337-1340
- **ND-3+ DOPED FIBER LASER WITH INTEGRATED ACOUSTOOPTIC MODE-LOCKING** *CONF ON FIBER LASER SOURCES AND AMPLIFIERS*  
Howell, M. D., Patterson, D. B., Kino, G. S., KHURIYAKUB, B. T., Dignonnet, M. J.  
SPIE - INT SOC OPTICAL ENGINEERING.1990: 309-315
- **Switchable acoustooptic tap for optical fibers** *Technical Digest Series*  
Patterson, D., B., Howell, M., D., Dignonnet, M., Kino, G., S., Khuri-Yakub, B., T.  
1990: 98
- **High-frequency acousto-optic mode locker for picosecond pulse generation** *Optics Letters*  
Keller, U., Li, K., D., Khuri-Yakub, B., T., Bloom, D., M., Weingarten, K., J., Gerstenberger, D., C.  
1990; 15 (1): 45-7
- **A SAM BEARING BALL INSPECTION SYSTEM** *1989 ANNUAL REVIEW OF PROGRESS IN QUANTITATIVE NONDESTRUCTIVE EVALUATION*  
Chou, C. H., Parent, P., KHURIYAKUB, B. T.  
PLENUM PRESS DIV PLENUM PUBLISHING CORP.1990: 2091-2096
- **PHOTOTHERMAL MEASUREMENTS OF HIGH-TC SUPERCONDUCTORS** *6TH INTERNATIONAL TOPICAL MEETING ON PHOTOACOUSTIC AND PHOTOTHERMAL PHENOMENA*  
FANTON, J. T., Kapitulnik, A., Mitzi, D. B., KHURIYAKUB, B. T., Kino, G. S.  
SPRINGER-VERLAG BERLIN.1990: 202-204
- **NOVEL HIGH-FREQUENCY AIR TRANSDUCERS** *1989 ANNUAL REVIEW OF PROGRESS IN QUANTITATIVE NONDESTRUCTIVE EVALUATION*  
Schiller, S., Hsieh, C. K., Chou, C. H., KHURIYAKUB, B. T.  
PLENUM PRESS DIV PLENUM PUBLISHING CORP.1990: 795-798
- **PHOTOTHERMAL MEASUREMENTS OF HIGH-TC SUPERCONDUCTORS** *APPLIED PHYSICS LETTERS*  
FANTON, J. T., Mitzi, D. B., Kapitulnik, A., KHURIYAKUB, B. T., Kino, G. S., Gazit, D., Feigelson, R. S.  
1989; 55 (6): 598-599

- **NOZZLELESS DROPLET FORMATION WITH FOCUSED ACOUSTIC BEAMS** *JOURNAL OF APPLIED PHYSICS*  
Elrod, S. A., Hadimioglu, B., KHURIYAKUB, B. T., RAWSON, E. G., Richley, E., Quate, C. F., Mansour, N. N., Lundgren, T. S.  
1989; 65 (9): 3441-3447
- **DESIGN AND IMPLEMENTATION OF MIXED-MODE TRANSDUCERS** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*  
Chou, C. H., KHURIYAKUB, B. T.  
1989; 36 (3): 337-341
- **DETACHABLE 400-MHZ ACOUSTOOPTIC PHASE MODULATOR FOR A SINGLE-MODE OPTICAL FIBER** *OPTICS LETTERS*  
Patterson, D. B., Godil, A. A., Kino, G. S., KHURIYAKUB, B. T.  
1989; 14 (4): 248-250
- **PHOTOACOUSTIC MEASUREMENTS OF SILICON-WAFER PROCESSING TEMPERATURES** *1989 SYMP OF THE INST OF ELECTRICAL AND ELECTRONICS ENGINEERS ON ULTRASONICS*  
Lee, Y. J., Chou, C. H., KHURIYAKUB, B. T., Saraswat, K., MOSLEHI, M.  
I E E E.1989: 535-538
- **NEAR-FIELD SCANNING ACOUSTIC MICROSCOPE** *1989 SYMP OF THE INST OF ELECTRICAL AND ELECTRONICS ENGINEERS ON ULTRASONICS*  
KHURIYAKUB, B. T., CINBIS, C., Chou, C. H., REINHOLDTSEN, P. A.  
I E E E.1989: 805-807
- **NOZZLELESS DROPLET FORMATION WITH FOCUSED ACOUSTIC BEAMS** *3RD INTERNATIONAL COLLOQUIUM ON DROPS AND BUBBLES*  
Elrod, S. A., Hadimioglu, B., KHURIYAKUB, B. T., RAWSON, E. G., Quate, C. F., Mansour, N. N., Lundgren, T. S.  
AIP PRESS.1989: 49-57
- **ALL-FIBER ACOUSTOOPTIC PHASE MODULATORS USING ZINC-OXIDE FILMS ON GLASS-FIBER** *JOURNAL OF LIGHTWAVE TECHNOLOGY*  
Godil, A. A., Patterson, D. B., HEFFNER, B. L., Kino, G. S., KHURIYAKUB, B. T.  
1988; 6 (10): 1586-1590
- **LENS DESIGN FOR ACOUSTIC MICROSCOPY** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*  
Chou, C. H., KHURIYAKUB, B. T., Kino, G. S.  
1988; 35 (4): 464-469
- **ULTRASONIC EXCITATION AND DETECTION OF CAPILLARY WAVES FOR THE MEASUREMENT OF SURFACE-FILM PROPERTIES** *APPLIED PHYSICS LETTERS*  
KHURIYAKUB, B. T., REINHOLDTSEN, P. A., Chou, C. H., Vesecky, J. F., Teague, C. C.  
1988; 52 (19): 1571-1572
- **GENERATION OF 7.8 PS ELECTRICAL TRANSIENTS ON A MONOLITHIC NONLINEAR TRANSMISSION-LINE** *ELECTRONICS LETTERS*  
Rodwell, M. J., Madden, C. J., KHURIYAKUB, B. T., Bloom, D. M., Pao, Y. C., GABRIEL, N. S., Swierkowski, S. P.  
1988; 24 (2): 100-102
- **HIGH-EFFICIENCY, MULTIPLE LAYER ZNO ACOUSTIC TRANSDUCERS AT MILLIMETER-WAVE FREQUENCIES** *APPLIED PHYSICS LETTERS*  
Hadimioglu, B., LACOMB, L. J., Wright, D. R., KHURIYAKUB, B. T., Quate, C. F.  
1987; 50 (23): 1642-1644
- **TUNABLE OPTICAL FILTER IN FIBEROPTIC FORM** *OPTICS LETTERS*  
Risk, W. P., Kino, G. S., KHURIYAKUB, B. T.  
1986; 11 (9): 578-580
- **SWITCHABLE FIBEROPTIC TAP USING THE ACOUSTOOPTIC BRAGG INTERACTION** *OPTICS LETTERS*  
HEFFNER, B. L., Kino, G. S., KHURIYAKUB, B. T., Risk, W. P.  
1986; 11 (7): 476-478
- **DEPOSITION OF ORIENTED ZINC-OXIDE ON AN OPTICAL FIBER** *APPLIED PHYSICS LETTERS*  
HEFFNER, B. L., KHURIYAKUB, B. T.  
1986; 48 (21): 1422-1423



- **PRECISE PHASE MEASUREMENTS WITH THE ACOUSTIC MICROSCOPE** *IEEE TRANSACTIONS ON SONICS AND ULTRASONICS*  
Liang, K. K., Bennett, S. D., KHURIYAKUB, B. T., Kino, G. S.  
1985; 32 (2): 266-273
- **MATERIAL CHARACTERIZATION BY THE INVERSION OF  $V(Z)$**  *IEEE TRANSACTIONS ON SONICS AND ULTRASONICS*  
Liang, K. K., Kino, G. S., KHURIYAKUB, B. T.  
1985; 32 (2): 213-224
- **ACOUSTIC RESONATOR TRANSDUCER FOR OPERATION IN AIR** *ELECTRONICS LETTERS*  
Fox, J. D., KHURIYAKUB, B. T., Kino, G. S.  
1985; 21 (16): 695-696
- **7-GHZ ACOUSTIC TRANSMISSION THROUGH A HERTZIAN CONTACT** *APPLIED PHYSICS LETTERS*  
HEFFNER, B. L., Kino, G. S., KHURIYAKUB, B. T.  
1985; 47 (1): 17-18
- **ACOUSTIC MICROSCOPY IN AIR AT 2 MHZ** *APPLIED PHYSICS LETTERS*  
Fox, J. D., Kino, G. S., KHURIYAKUB, B. T.  
1985; 47 (5): 465-467
- **MEASUREMENT OF NORMAL SURFACE DISPLACEMENTS FOR THE CHARACTERIZATION OF RECTANGULAR ACOUSTIC ARRAY ELEMENTS** *JOURNAL OF THE ACOUSTICAL SOCIETY OF AMERICA*  
Jungerman, R. L., Bennett, P., Selfridge, A. R., KHURIYAKUB, B. T., Kino, G. S.  
1984; 76 (2): 516-524
- **EFFECT OF PHOTOCARRIERS ON ACOUSTIC-WAVE PROPAGATION FOR MEASURING EXCESS CARRIER DENSITY AND LIFETIMES IN SILICON** *APPLIED PHYSICS LETTERS*  
STEARNS, R. G., KHURIYAKUB, B. T., Kino, G. S.  
1984; 45 (11): 1181-1183
- **MEASUREMENTS OF ADHERENCE OF RESIDUALLY STRESSED THIN-FILMS BY INDENTATION .2. EXPERIMENTS WITH ZNO/ SI** *JOURNAL OF APPLIED PHYSICS*  
Rossington, C., Evans, A. G., Marshall, D. B., KHURIYAKUB, B. T.  
1984; 56 (10): 2639-2644
- **OPTICAL-DETECTION OF ACOUSTIC DISPLACEMENTS FOR THE CHARACTERIZATION OF SURFACE-DEFECTS** *MATERIALS EVALUATION*  
Jungerman, R. L., KHURIYAKUB, B. T., Kino, G. S.  
1984; 42 (4): 444-450
- **BROAD-BAND OPTICAL CAVITIES FOR INFRARED FREE-ELECTRON LASERS - ANALYSIS AND PRELIMINARY EXPERIMENTAL RESULTS** *APPLIED OPTICS*  
Cutolo, A., KHURIYAKUB, B. T., Madey, J. M.  
1984; 23 (17): 2935-2943
- **CHARACTERIZATION OF SURFACE-DEFECTS USING A PULSED ACOUSTIC LASER PROBE** *APPLIED PHYSICS LETTERS*  
Jungerman, R. L., KHURIYAKUB, B. T., Kino, G. S.  
1984; 44 (4): 392-393
- **A NEW TYPE OF LASER PROBE** *APPLIED PHYSICS LETTERS*  
STEARNS, R. G., Kino, G. S., KHURIYAKUB, B. T.  
1983; 42 (8): 659-661
- **CONICAL TRANSDUCER FOR GENERATION OF ACOUSTIC-WAVES IN FLUIDS** *APPLIED PHYSICS LETTERS*  
Baer, R. L., KHURIYAKUB, B. T., Kino, G. S.  
1983; 42 (7): 573-574
- **MEASUREMENT OF PERIODIC SURFACE HEATING USING SURFACE ACOUSTIC-WAVES** *APPLIED PHYSICS LETTERS*  
STEARNS, R. G., KHURIYAKUB, B. T., Kino, G. S.  
1983; 43 (8): 748-750

- **OPTICAL PROBING OF ACOUSTIC-WAVES ON ROUGH SURFACES** *JOURNAL OF THE ACOUSTICAL SOCIETY OF AMERICA*  
Jungerman, R. L., KHURIYAKUB, B. T., Kino, G. S.  
1983; 73 (5): 1838-1841
- **PRECISION-MEASUREMENT OF RAYLEIGH-WAVE VELOCITY PERTURBATION** *APPLIED PHYSICS LETTERS*  
Liang, K., Bennett, S. D., KHURIYAKUB, B. T., Kino, G. S.  
1982; 41 (12): 1124-1126
- **EFFECT OF NONUNIFORM PIEZOELECTRIC FILMS ON MONOLITHIC SURFACE ACOUSTIC-WAVE DEVICES** *APPLIED PHYSICS LETTERS*  
Bowers, J. E., Thornton, R. L., KHURIYAKUB, B. T., Jungerman, R. L., Kino, G. S.  
1982; 41 (9): 805-807
- **REACTIVE MAGNETRON SPUTTERING OF ZNO** *JOURNAL OF APPLIED PHYSICS*  
KHURIYAKUB, B. T., Smits, J. G., Barbee, T.  
1981; 52 (7): 4772-4774
- **ACOUSTIC SURFACE-WAVE MEASUREMENTS OF SURFACE CRACKS IN CERAMICS** *JOURNAL OF THE AMERICAN CERAMIC SOCIETY*  
KHURIYAKUB, B. T., Kino, G. S., Evans, A. G.  
1980; 63 (1-2): 65-71
- **A THEORY FOR THE RADIATION-PATTERN OF A NARROW-STRIP ACOUSTIC TRANSDUCER** *APPLIED PHYSICS LETTERS*  
Selfridge, A. R., Kino, G. S., KHURIYAKUB, B. T.  
1980; 37 (1): 35-36
- **BROAD-BAND EFFICIENT THIN-FILM SEZAWA WAVE INTERDIGITAL TRANSDUCERS** *APPLIED PHYSICS LETTERS*  
Bowers, J. E., KHURIYAKUB, B. T., Kino, G. S.  
1980; 36 (10): 806-807
- **GENERATION AND DETECTION OF UNIPOLAR STRESS PULSES** *APPLIED PHYSICS LETTERS*  
Yu, F., LLIC, D. B., KHURIYAKUB, B. T., Kino, G. S.  
1980; 36 (7): 553-555
- **SHEAR-WAVE EXCITATION IN A SOLID BY LONGITUDINAL-WAVE CONTACT TRANSDUCERS** *JOURNAL OF APPLIED PHYSICS*  
Chou, C. H., Liang, K., KHURIYAKUB, B. T., Kino, G. S.  
1980; 51 (10): 5257-5259
- **EDGE-BONDED SURFACE-ACOUSTIC-WAVE TRANSDUCER ARRAY** *APPLIED PHYSICS LETTERS*  
TUAN, H. C., Kino, G. S., KHURIYAKUB, B. T., Selfridge, A. R.  
1979; 35 (4): 320-321
- **ACOUSTIC MEASUREMENT OF STRESS INTENSITY FACTORS** *APPLIED PHYSICS LETTERS*  
RESCH, M. T., KHURIYAKUB, B. T., Kino, G. S., SHYNE, J. C.  
1979; 34 (3): 182-184
- **ULTRASONIC-ATTENUATION OF PIEZOELECTRIC PVF2 FILMS AT HIGH-FREQUENCIES** *ELECTRONICS LETTERS*  
KHURIYAKUB, B. T., Chou, C. H.  
1979; 15 (11): 308-309
- **LENGTH AND DEPTH RESONANCES OF SURFACE CRACKS AND THEIR USE FOR CRACK SIZE ESTIMATION** *APPLIED PHYSICS LETTERS*  
DOMARKAS, V., KHURIYAKUB, B. T., Kino, G. S.  
1978; 33 (7): 557-559
- **ULTRASONIC-ATTENUATION IN CERAMICS** *JOURNAL OF APPLIED PHYSICS*  
Evans, A. G., Tittmann, B. R., Kino, G. S., Ahlberg, L., KHURIYAKUB, B. T.  
1978; 49 (5): 2669-2679
- **DESIGN OF EFFICIENT BROAD-BAND WEDGE TRANSDUCERS** *APPLIED PHYSICS LETTERS*  
Fraser, J., KHURIYAKUB, B. T., Kino, G. S.  
1978; 32 (11): 698-700

- **NEW TECHNIQUE FOR EXCITATION OF SURFACE AND SHEAR ACOUSTIC-WAVES ON NONPIEZOELECTRIC MATERIALS** *APPLIED PHYSICS LETTERS*  
KHURIYAKUB, B. T., Kino, G. S.  
1978; 32 (9): 513-514
- **APPLICATION OF WIENER FILTERING TO NONDESTRUCTIVE EVALUATION** *APPLIED PHYSICS LETTERS*  
Murakami, Y., KHURIYAKUB, B. T., Kino, G. S., Richardson, J. M., Evans, A. G.  
1978; 33 (8): 685-687
- **ACOUSTIC PULSE ECHO MEASUREMENTS AT 200 MHZ** *APPLIED PHYSICS LETTERS*  
KHURIYAKUB, B. T., Kino, G. S.  
1977; 30 (2): 78-80
- **DETAILED THEORY OF MONOLITHIC ZINC-OXIDE ON SILICON CONVOLVER** *IEEE TRANSACTIONS ON SONICS AND ULTRASONICS*  
KHURIYAKUB, B. T., Kino, G. S.  
1977; 24 (1): 34-43
- **MONOLITHIC WAVEGUIDE ZINC-OXIDE-ON-SILICON CONVOLVER** *ELECTRONICS LETTERS*  
KHURIYAKUB, B. T., Kino, G. S.  
1976; 12 (11): 271-272
- **NEW METHOD FOR WIDEBAND EXCITATION OF INTERDIGITAL SURFACE-WAVE TRANSDUCERS** *ELECTRONICS LETTERS*  
KHURIYAKUB, B. T., JOLY, R. L.  
1976; 12 (11): 266-267
- **STUDIES OF OPTIMUM CONDITIONS FOR GROWTH OF RF-SPUTTERED ZNO FILMS** *JOURNAL OF APPLIED PHYSICS*  
KHURIYAKUB, B. T., Kino, G. S., Galle, P.  
1975; 46 (8): 3266-3272