Dong-Guk Paeng

Office in Korea
Department of Ocean System Engineering
Jeju National University
Jejudaehakno 102, Jeju, 63243 Korea
+82-64-754-3484, Work
paeng@jejunu.ac.kr

Office in USA
FUS Ambassador, Asia
Focused Ultrasound Foundation
1230 Cedars Court, Suite 206
Charlottesville, VA, 22903 USA
dpaeng@fusfoundation.org

Education

Ph.D. **THE PENNSYLVANIA STATE UNIVERSITY** University Park, PA, USA
Graduate Program in Acoustics August 2002
Advisor: Dr. K. Kirk Shung
Dissertation Title: Cyclic and radial variation of ultrasonic backscatter from flowing porcine blood

M.S. **MASSACHUSETTS INSTITUTE OF TECHNOLOGY** Cambridge, MA, USA
Ocean Engineering September 1997
Advisor: Dr. Henrik Schmidt
Thesis Title: Normal mode acoustic wave scattering considering elastic layers over a half space

HANYANG UNIVERSITY Ansan, Korea
Earth and Marine Sciences August 1993
Advisor: Dr. JungYul Na
Thesis Title: Acoustical characteristics of the eddies in the East Sea of Korea

B.S. **HANYANG UNIVERSITY** Ansan, Korea
Earth and Marine Sciences February 1991

Experience

JEJU NATIONAL UNIVERSITY Jeju, Korea
Professor in Dept. of Ocean System Engineering March 2003 ~ Present

- Taught Introduction of Acoustics, Underwater Acoustics, Electro-Acoustic Transducer, Engineering Mathematics for undergraduate classes in Korean, Biomedical Ultrasound, Acoustic Wave Scattering, Theoretical Acoustics, Acoustics in Fluid Media for graduate classes in English
- Investigated tissue characterization focused on the ultrasonic backscattering from blood, vessel, and tissue
- Developed high frequency ultrasonic transducers and its applications using ultrasound backscatter microscopy

UNIVERSITY OF VIRGINIA Charlottesville, VA, USA
Associate Research Professor in Radiology and Medical Imaging June 2020 ~ May 2022
Associate Research Professor in Radiation Oncology January 2015 ~ May 2020

- Investigated the acoustic ray modeling of transcranial focused ultrasound and verified the modeling results with experimental hydrophone measurement using InSightec's ExAblate Neuro 660 kHz hemispherical transducer
- Performed the pig experiment to measure the chronic effects of histotripsy on the pig brain tissue

FOCUSED ULTRASOUND FOUNDATION (FUSF) Charlottesville, VA, USA
Focused Ultrasound Ambassador, Asia July 2016 ~ Present
- Accelerated the research and clinical trials of focused ultrasound in Asian countries
- Represented focused ultrasound foundation to gather information of FUS development and activities of FUS societies in Asia

Richard Merkin Visiting Fellow January 2015 ~ June 2016
- Investigated the effects of thermal dose on the brain tissue for thermal damage using a pig brain model by transcranial high intensity focused ultrasound
- Accelerated the investigation of chronic effects of histotripsy on the pig brain tissue and its transcranial applications
- Explored how to localize the cavitation generated by a hemispherical focused ultrasound transducer during transcranial brain treatment

UNIVERSITY OF SOUTHERN CALIFORNIA University Park, CA, USA
Visiting Scholar as a Research Associate July 2007 ~ August 2008
- Investigated ultrasonic imaging of retinal vein occlusion using very high frequency ultrasound
- Explored therapeutic ultrasound to open retinal vein occlusion in a rabbit model
- Lens characterization for cataract surgery using high frequency ultrasound backscattering signals
- Published 3 SCI(E) journal papers, filed an international patent, and applied two NIH grant proposals

UNIVERSITY OF SOUTHERN CALIFORNIA University Park, CA, USA
Research Associate August 2002 ~ September 2003
- Continued to research blood properties using ultrasound
- Prepared an NIH proposal and several journal papers

THE PENNSYLVANIA STATE UNIVERSITY University Park, PA, USA
Research Assistant May 1998 ~ August 2002
- Investigated hemodynamics and hemorheology by ultrasound *in vitro* and *in vivo* focused on the analysis of the Doppler signals and ultrasound backscattered images from flowing blood
- Performed sensitivity tests for Doppler devices
- Measured acoustic impedance of coupling gels for transducers

MASSACHUSETTS INSTITUTE OF TECHNOLOGY Cambridge, MA, USA
Research Assistant September 1996 ~ May 1998
- Corrected the motion of mooring position and analyzed tomographic experimental data of the Gulf Stream
- Developed normal mode scattering theory and implemented computer programs from a rough bottom with elastic layers, using ocean acoustic models such as OASES, KRAKEN and NMSCAT

KOREA OCEAN RESEARCH AND DEVELOPMENT INSTITUTE Ansan, Korea
Researcher December 1994 ~ July 1995
- Collected and analyzed ambient noise data of the adjacent seas around the Korean peninsula

DAEWOO SHIPBUILDING AND MACHINERY LTD. KyungNam, Korea
Researcher December 1993 ~ April 1994
- Measured and analyzed noise and vibration of newly-made ships for the Noise and Vibration Team in the Design Research Institute

HANYANG UNIVERSITY Ansan, Korea
Research Assistant March 1991 ~ August 1993

- Modeled ocean circulation excited by sea surface winds and data assimilation of wind and CTD data, using oceanographic and ocean acoustic models such as the Cardone model, IFD, the Generic Sonar Model

KOREA OCEAN RESEARCH AND DEVELOPMENT INSTITUTE Ansan, Korea
Experimenter August 1991 ~ September 1991

- KORDI/USGS Joint survey of manganese nodules on a research vessel in the Central Pacific Ocean

KOREAN NAVY Seoul, Korea
Guard February 1988 ~ June 1989

Reviewed Publications

*Under-bar: Either 1st or corresponding author

International Journals (SCI or SCIE)

1. C.-A. Lee, H.M.U. Farooqi, **D.-G. Paeng**, "Axial shear rate: A hemorheological factor for erythrocyte aggregation under Womersley flow in an elastic vessel based on numerical simulation," *Computers in Biology and Medicine*, 157:106767, 2023
2. S. Min, Y. Byeon, M. Kim, Y. Lee, S.-H. Lee, H.M.U. Farooqi, H.-K. Lee, **D.-G. Paeng**, "Production enhancement of human adipose-derived mesenchymal stem cells by low-intensity ultrasound stimulation," *Scientific Reports* 12, 22041, 2022
3. J. Lee, J. LaRocco, **D-G Paeng**, "Electroencephalographic Response of Brain Stimulation by Shock Waves from Laser Generated Carbon Nanotube Transducer," *IEEE Transactions on Neural systems and Rehabilitation Engineering*, 30, pp1-9, 2022.
4. M. Kim, J.C. Choe, **D-G Paeng** S. Kohshima, S. Jang, "The Survival of a Flukeless Juvenile Dolphin (Tursiops aduncus) in the Wild', *Aquatic Mammals*, 48(6), p505-8, 2022
5. R. Amjad, C.-A. Lee, H.M.U. Farooqi, H. Khan, **D.-G. Paeng**, "Choroidal Thickness in Different Patterns of Diabetic Macular Edema", *Clinl. Med.*, *11*(20), 6169, 2022
6. J. Lee, S.B. Zaigham, **D.-G. Paeng** , "Shock Wave Characterization Using Different Diameters of an Optoacoustic Carbon Nanotube Composite Transducer", *Appl. Sci.*, *12*(14), 7300, 2022
7. I. Jeong, **D.-G.Paeng**, "Circadian and Tidal Changes in Snapping Shrimp (Alpheus brevicristatus) Sound Observed by a Moored Hydrophone in the Coastal Sea of Western Jeju", *Appl. Sci.*, *12*(13), 6493, 2022
8. C. Jin, M. Kim, S. Jang, **D.-G. Paeng**, "Semantic segmentation-based whisle extraction of Indo-Pacific bottlenose dolphin residing at the coast of Jeju Island," *Ecol Indics*, 137, 108792, 2022
9. C.-A. Lee, **D.-G. Paeng**, "Numerical simulation of spatiotemporal red blood cell aggregation under sinusoidal pulsatile flow," *Scientific Reports*, 11:9977, 2021
10. S. Min, G. Kang, **D.-G. Paeng**, J. Choi, "The reasons why fractional flow reserve and instantaneous wave-free ratio are similar using wave separation analysis", *BMC Cardiovasc Disord*, 25;21(1):48, 2021
11. H. Kim, **D.-G. Paeng** , "In Situ Measurement of Sound Attenuation by Fish Schools (Japanese Horse Mackerel, *Trachurus japonicus*) at Mid-Frequency Bands", *Appl. Sci.*, *11*(4), 1944, 2021
12. J. LaRocco, M.D. Le, **D.-G. Paeng**, "A systemic review of available low-cost EEG headsets used for drowsiness and detection," *Frontiers in Neuroinformatics*, 14, p1-9, 2020
13. J. Lee, **D.-G. Paeng**, K. Ha, "Attenuation of the human skull at broadband frequencies by using a carbon nanotube composite photoacoustic transducer," *Journal of the Acoustical Society of America,* 148, p1121-9, 2020
14. C. Jin, D. Moore, J Snell, **D.-G. Paeng**, "An open-source phase correction toolkit for transcranial focused ultrasound," *BMC Biomedical Engineering*, 2 (9), 2020
15. J. LaRocco, **D.-G. Paeng**," Optimizing Computer-Brain Interface Parameters for Non-invasive Brain-to-Brain Interface," *Frontiers in Neuroinformatics*, 14(1), p1-9, 2020
16. J. LaRocco, **D.-G. Paeng**," A functional analysis of two 3D-scanned antique pistols from New Zealand," *Virtual Archaeology Review*, 11(22), p84-94, 2020
17. C.-A. Lee, Q. Kong, **D.-G. Paeng**,"Depletion-model-based numerical simulation of the kinetics of red blood cell aggregation under sinusoidal pulsatile flow," *Biorheology*, 55, p1-14, 2018
18. H. Kim, T.-H. Bok, **D.-G. Paeng**, J. Kim, K.-H. Kwon, J.B Lee, M. Mahfuzur, "Mobility of *Amphidinium* Carterae Hulburt measured by high-frequency ultrasound," *Journal of the Acoustical Society of America Express Letters*, v141, pEL395-401, 2017
19. C. Jin, K.-H. Nam, **D.-G. Paeng**, "Asymmetric pulsation of rat carotid artery bifurcation in three-dimension observed by ultrasound imaging," *Int J Cardiovasc Imaging*, 32(10), p1499-1508, 2016
20. K.-H. Nam, J. Kim, G. Ra, C.-H. Lee, **D.-G. Paeng**, "Feasibility Study of Ex Ovo Chick Chorioallantoic Artery Model for Investigating Pulsatile Variation of Arterial Geometry," *PLOS ONE*, 10(12), p1-16, 2015
21. J. Kim, H. Kim, T.-H. Bok, J. Lee, **D.-G. Paeng**, "Low-salinity-induced surface sound channel in the Western Sea of Jeju Island during summer," *Journal of the Acoustical Society of America*,

137(3), p1576-85, 2015

22. T.-H. Bok, Y. Lee, K.-H. Nam, J.-C. Choi, **D.-G. Paeng**, "Feasibility study of high-frequency ultrasonic blood imaging in human radial artery," *Journal of Medical And Biological Engineering*, 35(1), p21-27, 2015
23. T.-H. Bok, J. Kim, J. Bae, C.H. Lee, **D.-G. Paeng**, "Implementation of a rotational ultrasound biomicroscopy system equipped with a high-frequency angled needle transducer-*Ex Vivo* ultrasound imaging of porcine ocular posterior tissues," Sensors, 14, p17807-17816, 2014, doi:10.3390/s140917807
24. E. Yeom, K.-H. Nam, C. Jin, **D.-G. Paeng**, and S.-J. Lee, "3D reconstruction of a carotid bifurcation from 2D transversal ultrasound images," *Ultrasonics*, 54(8), p2184-92 2014, DOI: 10.1016/j.ultras.2014.06.002.
25. E. Yeom, K.-H. Nam, **D.-G. Paeng**, and S.-J. Lee, "Effects of red blood cell aggregates dissociation on the estimation of ultrasound speckle image velocimetry," *Ultrasonics*, 54(6), p1480-1487, 2014.
26. K.-H. Nam and **D.-G. Paeng**, "*In vivo* observation of the hypoechoic "black hole" phenomenon in rat arterial bloodstream: A preliminary study," *Ultrasound in Medicine and Biology*, 40(7), p1619-28, 2014
27. E. Yeom, K.-H. Nam, **D.-G. Paeng**, and S.-J. Lee, "Improvement of ultrasound speckle image velocimetry using image enhancement techniques," *Ultrasonics*, 54(1), p205-216, 2014.
28. K.-H. Nam, T.-H. Bok, C. Jin, **D.-G. Paeng**, "Asymmetric radial expansion and contraction of rat carotid artery observed using a high-resolution ultrasound imaging system," *Ultrasonics*, 54(1), p233-240, 2014.
29. T.-H. Bok, J. Na, and **D.-G. Paeng**, "Diel variation in high-frequency acoustic backscatter from *Cochlodinium polykrikoides*," *Journal of the Acoustical Society of America Express Letter*, v134(2), pEL140-146, 2013
30. S.R. Guntur, K.I. Lee, **D.-G. Paeng**, and A. Coleman, M.J. Choi, "Temperature-dependent thermal properties of ex vivo liver undergoing thermal ablation," *Ultrasound in Medicine and Biology*, 39(10), p1771-1784, 2013.
31. K.-H. Nam, T.-H. Bok, Q. Kong, **D.-G. Paeng**, "High Spatial and Temporal Resolution Observations of Pulsatile Changes in Blood Echogenicity in the Common Carotid Artery of Rats," *Ultrasound in Medicine and Biology*, 39(9), p1665-1671, 2013.
32. R. Chen, **D.-G. Paeng**, K.H. Lan, Q. Zhou, K.K. Shung, N. Matsuoka, M.S. Humayun, "In vivo sonothrombolysis of ear marginal vein of rabbits monitored bu high-frequency ultrasound needle transducer,' *Journal of Medical And Biological Engineering*, v33(1), p103-110, 2013
33. M.J. Choi, S.R. Guntur, K.I. Lee, **D.-G. Paeng**, and A. Coleman, "A Tissue Mimicking Polyacrylamide Hydrogel Phantom For Visualizing Thermal Lesions Generated By High Intensity Focused Ultrasound," *Ultrasound in Medicine and Biology*, 39(3), p439-448, 2013.
34. M.J. Choi, S.C. Cho and **D.-G. Paeng**, K.I. Lee, and A. Coleman, "Thickness Effects of the Metallic and the Insulating Membranes of a Cylindrical Electromagnetic Shock Wave Transducer,'" Journal of The Korean Physical Society, v59(6), p3583-3587, 2011
35. M.J. Choi, S.R. Guntur, J.M Lee, **D.-G. Paeng**, K.I. Lee, and A. Coleman, "Changes In Ultrasonic Properties Of Liver Tissue In Vitro During Heating-Cooling Cycle Concomitant With Thermal Coagulation," *Ultrasound in Medicine and Biology*, 37(4), p513-21, 2011.
36. Y. Li, T.-H. Bok, J.-H. Yang, M.-J. Choi, and **D.-G. Paeng,** "The acute effects of smoking on the cyclic variations in blood echogenicity of carotid artery," *Ultrasound in Medicine and Biology*, 37(4), p513-21, 2011.
37. K.H. Nam, M.J. Choi, E.S. Yoo, and **D.-G. Paeng,** "Influence of Cell Packing by Centrifugation on 40-MHz Ultrasound Backscatter," *Ultrasonics*, 51(2), p197-201, 2011.
38. **D.-G. Paeng,** K.H. Nam, and K.K. Shung, "Cyclic and radial variation of the echogenicity of blood in human carotid arteries observed by harmonic imaging," *Ultrasound in Medicine and Biology*, 36(7), p1118-1124, 2010.
39. N Matsuoka, **D-G Paeng**, R Chen, M Humayun and K. K. Shung, "Ultrasonic Doppler Measurements of Blood Flow Velocity of Rabbit Retinal Vessels Using a 45 MHz Needle Transducer," *Graefe's Archive for Clinical and Experimental Ophthalmology,* 248(5), pp675-680, 2010.

40. T-H Bok, **D-G Paeng,** E-H Kim, J-Y Na, D-H Kang, "Ultrasound Backscattered Power from *Cochlodinium polykrikoides*, the Main Species of Red Tide in the Southern Sea of Korea," *Journal Plankton Research,* 30(4), pp503-514, 2010.
41. SK Park, SRAR Guntur, KI Lee, **D-G Paeng**, and MJ Choi, "Reusable ultrasonic tissue mimicking hydro-gels containing nonionic surface active agents for visualizing thermal lesions," *IEEE Transactions on Biomedical Engneering*, 57(1), pp194-202, 2010.
42. **D.-G. Paeng** and Kweon-Ho Nam, "Ultrasonic visualization of dynamic behavior of red blood cells in flowing blood," *Journal of Visualization,* **12(4)**, pp295-306, 2009 (SCIE)
43. **D.-G. Paeng,** K.H. Nam, M.J. Choi and K.K. Shung, "Three-dimentional reconstruction of the "Bright Ring" Echogenicity from porcine blood upstream in a stenosed tube," *IEEE Transactions on Ultrasonics, Ferroelectrics and Frequency Control*, **56(4)**, pp880-885, 2009.
44. **D.-G. Paeng** JH Chang, R Chen, M Humayun and K. K. Shung, "Feasibility of rotational scan ultrasound imaging by an angled high frequency transducer for the posterior segment of the eye," *IEEE Transactions on Ultrasonics, Ferroelectrics and Frequency Control*, **56(3)**, pp676-680, 2009.
45. K.H. Nam, **D.-G. Paeng,** and M.J. Choi, "Ultrasonic Backscatter from rat blood in aggregation media under in vitro rotational flow," *IEEE Transactions on Ultrasonics, Ferroelectrics and Frequency Control*, **56(2)**, pp270-279, 2009.
46. K.H. Nam, **D.-G. Paeng,** M.J. Choi and K.K. Shung, "Ultrasonic Observation Of Blood Disturbance In A Stenosed Tube: Effects Of Flow Acceleration And Turbulence Downstream," *Ultrasound in Medicine and Biology*, **34(1)**, pp114-122, 2008.
47. **D.-G. Paeng**, H. H. Kim, S. G. Lee, S. M. Rhim and M. J. Choi, "Fabrication of a 40 MHz single element ultrasonic transducer using a PMN-PT single crystal," *Key Engineering Materials*, **321**, pp978-983, 2006.
48. M. K. Jeong, M. J. Choi, S. J. Kwon, M. H. Bae, **D.-G. Paeng**, B. Zeqiri, L. Wright and A. Coleman, "Ultrasonic characterization of thermal distribution in vicinity for a cylindrical thermal lesion in a biological tissue," *Key Engineering Materials*, **321**, pp1133-1138, 2006.
49. M. J. Choi, G. S. Kang, **D.-G. Paeng**, S. M. Rhim, M. H. Bae, B. Zeqiri and A. Coleman, "Characterization of the harmonic generation from cavitating bubbles interacted with a diagnostic U in the focal region of high intensity focused Ultrasound," *Key Engineering Materials*, **321**, pp1123-1128, 2006.
50. Y. Li, S.R. R. Guntur, M. J. Choi and **D.-G. Paeng**, "An automated measurement system of ultrasonic properties of Tofu and Acorn Curd (Dotori Muk)," *Key Engineering Materials*, **321**, pp1074-1077, 2006.
51. M. J. Choi, D. H. Doh, T. G. Hwang, C. H. Cho, **D.-G. Paeng**, G. H. Rhim and A. J. Coleman, "Acoustic streaming in lithotripsy fields: preliminary observation using a particle image velocimetry method," *Ultrasonics*, **44(2)**, pp133-145, 2006.
52. **D.-G. Paeng**, P. J. Cao, M. J. Choi and K. K. Shung, "Ultrasonic Backscatter response to blood flow disturbance by a severe eccentric stenosis," *Key Engineering Materials*, **270**, pp2036-2041, 2004.
53. M. J. Choi, W. K. Park, J. H. Park, K. S. Kang, M. K. Jeong, Y. J. Lee and **D.-G. Paeng**, "Potential for the diagnosis of micro bone fractures using an ultrasonic C-scan technique," *Key Engineering Materials*, **270**, pp2030-2035, 2004.
54. **D.-G. Paeng**, R. Y. Chiao and K. K. Shung, "Echogenicity Variations from Porcine Blood II: The 'Bright Ring' Under Oscillatory Flow," *Ultrasound in Medicine and Biology*, **30(6)**, pp815-825, 2004.
55. **D.-G. Paeng**, R. Y. Chiao and K. K. Shung, "Echogenicity Variations from Porcine Blood I: The 'Bright Collapsing Ring' Under Pulsatile Flow," *Ultrasound in Medicine and Biology*, **30(1)**, pp45-55, 2004.
56. **D.-G. Paeng** and K. K. Shung, "Cyclic and Radial Variation of the Doppler Power from Porcine Whole Blood," *IEEE Transactions on Ultrasonics, Ferroelectrics and Frequency Control*, **50(6)**, pp614-622, 2003.
57. K. K. Shung and **D.-G. Paeng**, "Ultrasound: An Unexplored Tool for Blood Flow Visualization and Hemodynamic Measurements," *Japanese Journal of Applied Physics*, **42**, pp2901-2908, 2003.
58. **D.-G. Paeng**, P. J. Cao and K. K. Shung, "Doppler power variation from porcine blood and

polystyrene microspheres under steady and pulsatile flow in a mock flow loop," *Ultrasound in Medicine and Biology*, **27(9)**, pp1245-1254, 2001.

59. P.J. Cao, **D.-G. Paeng** and K. K. Shung, "The 'Black hole' phenomenon in ultrasonic backscattering measurement under pulsatile flow with porcine whole blood in a rigid tube," *Biorheology*, **38(1)**, pp15-26, 2001.

Domestic Journals

1. I. Jeong, S. Min, **D.-G. Paeng**, "Moored measurement of the ambient noise and analysis with environmental factors in the coastal sea of Jeju Island", *The Journal of the Acoustical Society of Korea*, 39(5), p390-9, 2020. (In Korean)
2. G. Kim, M. Kim, K. Ha, J. Lee, **D.-G. Paeng**, M. J. Choi, "Waveform characteristics of ultrasonic wave generated from CNT/PDMS composite," *The Journal of the Acoustical Society of Korea*, 38(4), p459-66, 2019. (In Korean)
3. G. Kim, H. Kim, **D.-G. Paeng**, and Y.-K. Lim, "Acoustic measurements of WASP (Vespa Simillima Xanthoptera Cameron) and Honey bees with their frequency characteristic," J. Apiculture, 34(1), p7~13, 2019 (In Korean)
4. S. Min, C. Jin, **D.-G. Paeng**, "Time-synchronized measurement and cyclic analysis of ultrasound imaging from blood with blood pressure in the mock pulsatile blood circulation systems," *The Journal of the Acoustical Society of Korea*, 36(5), p361-9, 2017. (In Korean)
5. J. Kim, H. Kim, I.-C. Pang, **D.-G. Paeng**, "Simulation of temporal variation of acoustic transmission loss by internal tide in the Southern Sea of Jeju Island in summer," *The Journal of the Acoustical Society of Korea*, 34(1), p12-19, 2015. (In Korean)
6. H. Kim, J. Kim, **D.-G. Paeng**, "Analysis of surface sound channel by low salinity water and its mid-frequency acoustic characteristics in the East China Sea and the Gulf of Guinea," *The Journal of the Acoustical Society of Korea*, 34(1), p1-11, 2015. (In Korean)
7. J. Kim, H. Kim, **D.-G. Paeng**, "Analysis of haline channel formed in the East China Sea and the Atlantic Ocean using the T-S gradient diagram," *Journal of Marine Engineering*, 38(2), p208-16, 2014. (In Korean)
8. J. Kim, **D.-G. Paeng**, C.H. Lee, S. Lee, "Feature extraction algorithm for underwater transient signal using cepstral analysis based on wavelet packet best tree," *Journal of Ocean Engineering and Technology*, 28(6), p552-9, 2014. (In Korean)
9. J.Lee, C.H. Lee, J.Bae, **D.-G. Paeng**, M.H.Choi, W.-H. Kim, "Parametric array signal generation system using transducer array," *The Journal of the Acoustical Society of Korea*, 32(4), p287-293, 2013. (In Korean)
10. J.Lee, C.H. Lee, J.Bae, **D.-G. Paeng**, W.-H. Kim, "Performance of parametric array communication system in underwater AWGN channel," *Journal of Acoustical Society of Korea*, 32(4), p294-300, 2013. (In Korean)
11. J. Kim, T.-H. Bok, **D.-G. Paeng**, I.-C. Pang, J. Lee, "Acoustic channel formation and sound speed variation by low-salinity water in the western sea of Jeju during summer," *Journal of Acoustical Society of Korea*, 32(1), p1-13, 2013. (In Korean)
12. T.-H. Bok, J. Kim, **D.-G. Paeng**, C. H. Lee, J. Bae, S. Kim, "Extraction of an underwater transient signal using sound mask-filter," *Journal of Acoustical Society of Korea*, 31(8), p533-542, 2012. (In Korean)
13. T.-H. Bok, Q. Long, K.-H. Nam, J. C. Choi, **D.-G. Paeng**, "Pulsatility index of blood echogenicity of the human radial and common carotid arteries: Relation with age and stroke," *Journal of the Korean Society for Nondestructive,* 32(5), p494-501, 2012. (In Korean)
14. M.J. Choi, J. H. Yang, **D.-G. Paeng**, "Physics of harmonic imaging," *Journal of the Korean Society for Nondestructive,* 32(5), p564-572, 2012. (In Korean)
15. T.-H. Bok, J. Kim, **D.-G. Paeng**, J. Bae, C. H. Lee, S. Kim, "Classification of transient signals in ocean background noise using Bayesian classifier," *Journal of Ocean Engineering and Technology*, 26(4), p57-63, 2012. (In Korean)
16. J. Lee, J.-H. Lee, J.-W. Hyun, C. H. Lee, J. Bae, **D.-G. Paeng**, J. Cho, T. Kang, N. Lee, "Surveillance-alert system based on USN using PDR sensors," *Journal of the Institute of Electronics Engineers of Korea*, 48-TC(1), pp54-61, 2011 (in Korean)
17. J.H. Kim, T-H Bok, J.H. Bae, **D-G Paeng**, C-H Lee, S.I. Kim, "Communication performance

analysis according to seasons in West Sea," *Journal of the Institute of Electronics Engineers of Korea*, 48-TC(1), pp9-15, 2011 (in Korean)

18. T-H Bok, J.H. Kim, C-H Lee, J.H. Bae, **D-G Paeng**, I.C Pang, J.K. Lee, "Performance of underwater communication in low salinity layer at the Western Sea of Jeju," *Journal of the Institute of Electronics Engineers of Korea*, 48-TC(1), pp16-24, 2011 (in Korean)
19. J.H. Han, C-H Lee, **D-G Paeng**, J.H. Bae, W-H. Kim, "Parametric array sonar system based on maximum likelihood detection," *Journal of the Institute of Electronics Engineers of Korea*, 48-TC(1), pp25-31, 2011
20. T. H. Bok, **D.-G. Paeng**, "High frequency ultrasound and its applications to animal and human imaging focusing on vessel and blood," *Journal of Acoustical Society of Korea*, 29(2E), pp73-85, 2010.
21. T. H. Bok, L. Ying, **D.-G. Paeng**, J. K. Lee, K.K. Shin, and C.-Y. Joh "Calculation of the Mutual Radiation Impedance by the Spatial Convolution in the Cylindrical Structure," *Journal of Acoustical Society of Korea*, 29(1), pp1-9, 2010. (in Korean)
22. **D.-G. Paeng**, T. H. Bok, and J. K. Lee, "Computation of the mutual radiation impedance in the acoustic transducer array: a literature survery," *Journal of Acoustical Society of Korea*, **28(2E)**, pp51-59, 2009.
23. J. H. Kim, T.-H. Bok, **D.-G. Paeng**, T. Shim, Y. Kim and J.-S. Park, "Estimation of Phase Variance of Acoustic Signals Depending on Turbulence Strength Near the Mukho Port in the East Sea of Korea," *Journal of the Acoustical Society of Korea*, **28**(4), 328-335, 2009. (in Korean)
24. J.H. Yang, G.S. Kang, K.S. Lee, **D.-G. Paeng**, and M.J. Choi, "Effects of settings in dynamic ranges and frequency modes on ultrasonic images," *Journal of Korean Society of Radiological Technology*, **32(3)**, pp277-283, 2009. (in Korean)
25. T. H. Bok, **D.-G. Paeng**, Y.S. Park, G.S. Kong, and S. C. Park, "Seafloor Sediment Classification Using Nakagami Probability Density Function of Acoustic Backscattered Signals," *Journal of Acoustical Society of Korea*, **28(3)**, pp165-173, 2009. (in Korean)
26. J.H. Yang, K.S. Lee, G.S. Kang, **D.-G. Paeng**, and M.J. Choi, "Effects of Ultrasonic Scanner Setting Parameters on the Quality of Ultrasonic Images," *Journal of Acoustical Society of Korea*, **27(2)**, pp57-65, 2008. (in Korean)
27. K.H. Nam, **D.-G. Paeng** and M.J. Choi, "Ultrasound Backscattering from Erythrocyte Aggregation of Human, Horse, and Rat Blood under Rotational Flow in a Cylindrical Chamber," *Journal of Acoustical Society of Korea*, 25(4E), pp159-165, 2006.
28. Y. Li, S.R. R. Guntur, M. J. Choi and **D.-G. Paeng**, "Measurements of Acoustic Properties of Tofu and Acorn Curd as Potential Tissue-mimicking Materials," *Journal of Acoustical Society of Korea*, **24(4E**), pp132-138, 2005.
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Provisional Patents

Dong-Guk Paeng, Hossein Ameri, Jin Ho Chang, K. K. Shung, and Mark S. Humanyun, "High Frequency Ultrasound Imaging By Rotational Scanning Of Angled Transducer," PCT/US09/34643, EFS ID 4829681, Feb. 20, 2009.

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Invited Talks or Lectures

D.-G. Paeng, "A Study of Cardiovascular Hemodynamics and Hemorheology using High Frequency Ultrasound," *The 3rd KCLAM Forum, Seoul National University Hospital*, December 19, 2013.

D.-G. Paeng, "Ultrasonic Investigation of Blood and Blood Vessel," *Laboratory of Cardiovascular Genomics, Ewha Women University*, October 4, 2013.

D.-G. Paeng, "A study of Cardiovascular Hemodynamics and Hemorheology using High Frequency Ultrasound," *Mouse Cardiophenotype Center, Youngnam University*, September 4, 2013.

D.-G. Paeng, "Basic Principles of IVUS Imaging," *CIVUS 2013 Jeju Interventional Imaging Forum*, June 1, 2013.

D.-G. Paeng, "Blood Imaging by High Frequency Ultrasound," *The Korean Society of Visualization*, April 13, 2012.

D.-G. Paeng, Tae-Hoon Bok, Kweon-Ho Nam, Jeong Hwa Yang, "Acoustic Physics in Ultrasound Imaging and Artifacts", *Korea Society of Ultrasound in Medicine Conference*, 1, 10-11, 2013

D.-G. Paeng, "Investigation of Blood under Pulsatile Flow using Ultrasound Imaging," *AFSUMB (Asian Federation of Societies of Ultrasound in Medicine and Biology)*, May 17-21, 2004.

D.-G. Paeng, "Noninvasive Observation of red blood cell aggregation using Ultrasound," *Seoul National University Hospital*, Jan 17, 2004.

Text books

Kanglyul Ha, Moojoon Kim, **Dong-Guk Paeng,** The core of acoustic theory, Bookshill (in Korean), 2020, SBN : 9791159712760

Il-Hyoung Cho, **Dong-Guk Paeng**, Ocean Measurement and Underwater Exploration, Onnuri Publisher, (in Korean), 2010, ISBN 978-89-88271-91-9.

Career Awards

Best research award, Biomedical Engineering Society for Circulatory Disorder	2013
Best Award for the Class Portpolio Competition, Jeju National University	2013
Research Award, Acoustical Society of Korea	2010
Top 100 Scientists 2007, International Biographical Centre, Cambridge, England	2007
Marquis Who's Who in Science and Engineering	2007
Marquis Who's Who in Asia	2007

Marquis Who's Who in the World	2006
AFSUMB 2004 JSUM Award	2004
Kenneth T. Simowitz Memorial Award in The Pennsylvania State University	2004
Outstanding Presentation Award in the Acoustical Society of Korea	2004
Korean Government Scholarship for Studying Abroad	1995 ~ 1998
Hanyang University Scholarship for Studying Abroad	1995 ~ 1997
B. S. with honors in College of Natural Sciences in Hanyang University	February 1991
Hanyang University Scholarship of Tuition and Fee for full academic years	1985 ~ 1991

Professional Affiliations

AFSUMB (Asian Federation Society of Ultrasound in Medicine and Biology), Safety Committee	2012 ~ Present
Acoustical Society of America, Member	1996 ~ Present
Acoustical Society of Korea, Associate Editor, Fellow	2001 ~ Present
IEEE, Member	2008 ~ Present
Korean Society of Visualization, Editor	2011~ Present
Biomedical Engineering Society for Circulatory Disorder, Organizing Committee	2013~ Present
Korea Society for Therapeutic Ultrasound	2014 ~ Present