



**변영재** Franklin Bien

전기전자공학과 / Electrical Engineering

☎ 052-217-2173

✉ bien@UNIST.AC.KR

🌐 http://bicdl.unist.ac.kr

🏢 Engineering BLDG 2, Rm 405-3

**Curriculum Vitae**

- Associate Professor in Ulsan Nation Institute of Science & Technology (UNIST), Ulsan, Korea (03/2009-Present)
- Senior Analog/Mixed-Signal IC Design Engineer in Staccato Communications, San Diego, CA, U.S.A. (01/2007-02/2009)
- Senior IC Design Engineer, Products Engineering Group in Quellan, Inc., Atlanta, GA (01/2003-12/2004)
- IC Design Engineer, Semiconductor Products Group, R & D in Agilent Technologies, San Jose, CA (05/2000-12/2002)

**Academic Credential**

- Ph.D.: Electrical & Computer Engineering  
Georgia Institute of Technology, Atlanta, GA, U.S.A., December 2006  
Dissertation: "Reconfigurable Equalization for 10-Gb/s Serial Data

Links in a 0.18- m CMOS Technology"  
Advisor: Dr. Joy Laskar

- M.S.: Electrical & Computer Engineering  
Georgia Institute of Technology, Atlanta, GA, U.S.A., May 2000  
Advisor: Dr. Phillip E. Allen
- B.S.: Electronics Engineering,  
Yonsei University, Seoul, Korea, 1997  
Graduated with Honor

**Awards/Honors/Memberships**

- Head of School of Electrical & Computer
- Director of Self-powered Mobile Tracker Research Center (SMTRC)
- Director of Samsung-UNIST Display

**BICDL  
빅딜**

Current Research activities in BICDL includes mixed analog/RF integrated circuit (IC) design for touch screen sensing, glucose level sensing, and communication. In addition, studies on wireless power transfer (WPT) and evanescent mode power-transfer and communication technology (EMPaCT) are also ongoing. As of Feb. 2020, 6 Ph.D. and 8 M.S Degree students are graduated and currently, 15 members (M.S: 6, Ph.D.: 9) are researching and working together.

최근 관심 연구 분야는 터치 스크린 센싱, 혈당 측정, 통신을 위한 아날로그/디지털 통합회로 설계입니다. 그리고 무선전력전송과 에베네센트 모드를 이용한 전력전송 및 통신인 EMPaCT 를 연구하고 있습니다. 2020년 2월까지 박사 6명, 석사 8명을 배출하였고 현재는 15명의 학생들이 함께 연구 중입니다.

# Do you want Big Deal?! Come to BICDL

# Visit the website at <http://bicdl.unist.ac.kr> for more information.

**관심분야**

mixed analog/RF integrated circuit (IC) design for touch screen sensing, glucose level sensing, Wireless Power Transfer

**희망분야**

in-vivo continuous glucose sensing micro-system, Wireless power transfer, mixed analog/RF integrated circuit (IC) design for communication

**Research Keywords and Topics**

fingerprint sensor on screen, in-vivo continuous glucose sensing micro-system, Wireless power transfer, evanescent mode power-transfer and communication technology (EMPaCT), mixed analog/RF integrated circuit (IC) design for communication  
터치스크린 지문 센싱, 체내 혈당 연속 측정, 무선전력전송, 에베네센트를 이용한 전력전송 및 통신, 통신을 위한 아날로그/디지털 통합회로 설계

**Research Publications**

- IEEE Transactions on Circuits and Systems (T-CAS) I, "Differential Coded Multiple Signaling Method with Fully Differential Receiver for Mutual Capacitive Fingerprint TSP," S. Heo, K. Park, E. Choi, and F. Bien\*\*, Vol. 67, Issue. 1, pages: 74-85, 1 Jan., 2020
- Applied Physics Letters, "Electromagnetically Induced Transparency in Sinusoidal Modulated Ring Resonator," J. Malik, S. Oruganti, S. Song, N. Ko, and F. Bien\*\*, Jun. 06, 2018
- IEEE Transactions on Power Electronics, "Free Arrangement Wireless Power Transfer System with a Ferrite Transmission Medium and Geometry-Based Performance Improvement," S. Seo, H. Jo, and F. Bien\*\*, May 01, 2020, Vol. 35, Issue. 5, pages: 4518-4532

**Patents**

- 자기장 표면파를 이용한 무선 데이터 통신 장치, 변영재 / 박우진, (등록일 2020.09)
- 주파수변환장치를 적용한 표면파 안테나의 디지털 통신 효율 향상, 변영재/사이오루간티/허상현/박우진/서석태/이본영, (등록일 2020.05)