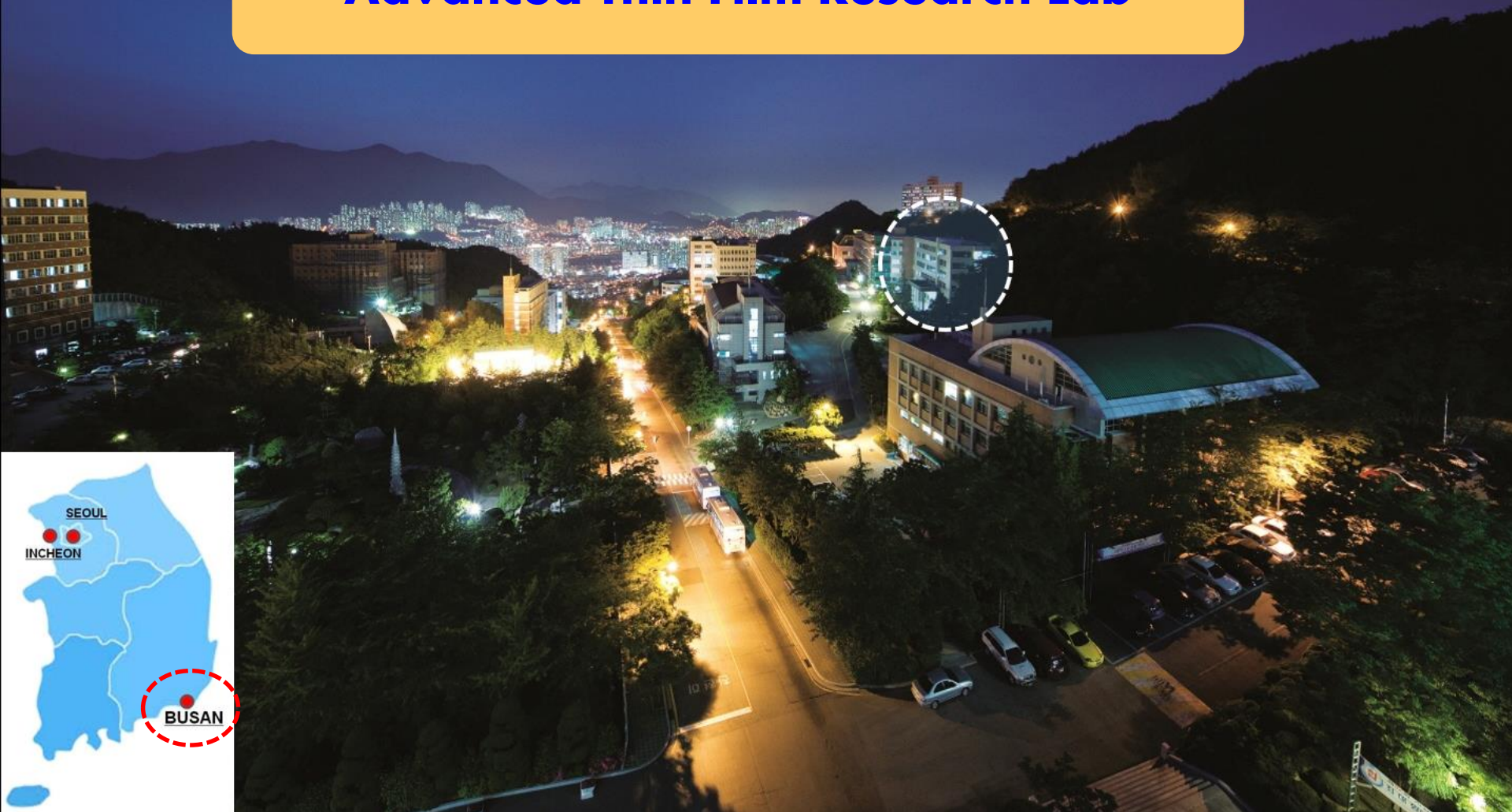




Dong-Eui University

Advanced Thin Film Research Lab



Prof. Choi (동의대학교 신소재공학부)



Doocho Choi is Associate Professor of Advanced Materials Engineering at Dong-Eui University, Busan, Republic of Korea.

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■ Education

- 2011 Carnegie Mellon University (U. S. A.)
Ph.D., Materials Science and Engineering
- 2005 Gwangju Institute of Science and Technology (Korea)
M. S. Materials Science and Engineering
- 2003 Pusan National University (Korea)
B. S., Materials Science and Engineering

■ Career

Korea Institute of Materials Science (Sr. Research Scientist)
University of Pennsylvania, (Postdoc Researcher)
SK Hynix Semiconductors (Researcher)

■ Recent Publication

1. Regulating Ag Wettability via Modulating Surface Stoichiometry of ZnO Substrates for Flexible Electronics, *Advanced Functional Materials* (2021) (Corresponding author)
2. Simultaneous enhancement in visible transparency and electrical conductivity via the physicochemical alterations of ultrathin-silver-film-based transparent electrodes, *Nano Letters* (2022) (Corresponding author)
3. A 3nm-thick, quasi-single crystalline Cu layer with ultralow optoelectrical losses and exceptional durability, *Acta Materialia* (2022) (Corresponding author)
4. Highly Transparent and Conductive Ultrathin Planar Copper Heaters for Wearable Electronics, *Applied Surface Science* (2021) (Corresponding author)
5. Thermal stability enhancement of ultrathin Ag film electrodes by incorporating atomic oxygen, *Applied Surface Science* (2021) (Corresponding author)

Research Team (동의대학교 신소재공학부)

Advanced Thin Film Laboratory

◎ Recent Projects (PI only)

- 한국연구재단 (후속)중견연구자 지원사업 (2022-2025)
: 초박형 금속 기반 유연투명전극 성능 극대화
- 한국연구재단 중견연구자 지원사업 (2019-2022)
: 초박형 금속 기반 유연투명전극 및 투명히터
- 현대자동차 그룹 (2021-2022)
: 대면적 차량 전면 유리 적용 투명 히터
- 부산산업과학혁신원 대학 R&D 사업 (2020)
: 차세대 인터커넥션 기획연구
- 한국연구재단 기본연구 (2016-2019)
: 초박형 금속 기반 유연투명전극
- LINC+ 산학공동기술과제 (2019)
: 중장비 차량용 투명히터

Lab members (M. S. 석사)



Vo Thi Bao Tran



임재운



김희창

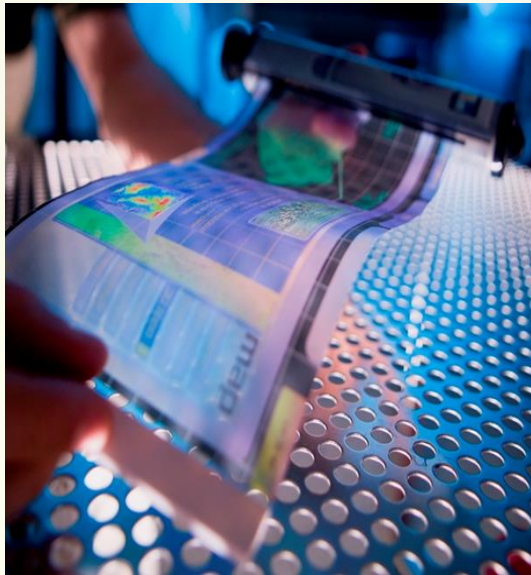


주시현

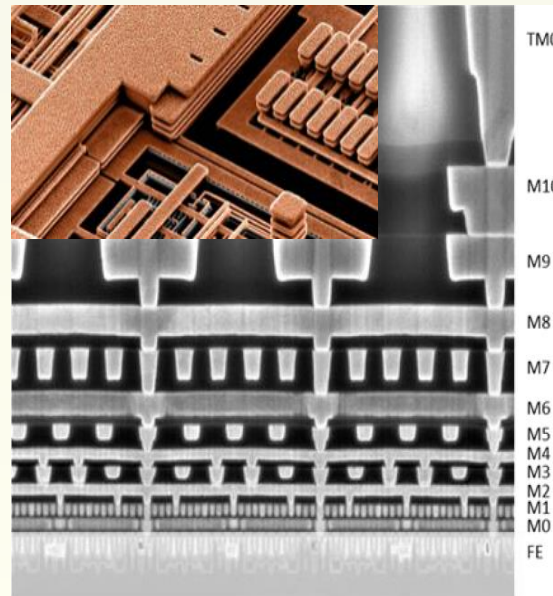
Research Area

초박형 (~10nm) 금속 박막 성장 제어 연구 (Ag, Cu, Al, W, Mo, ITO, ZnO, TiO₂....)

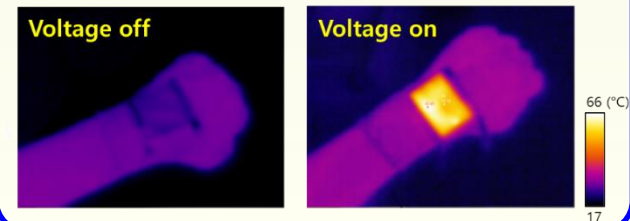
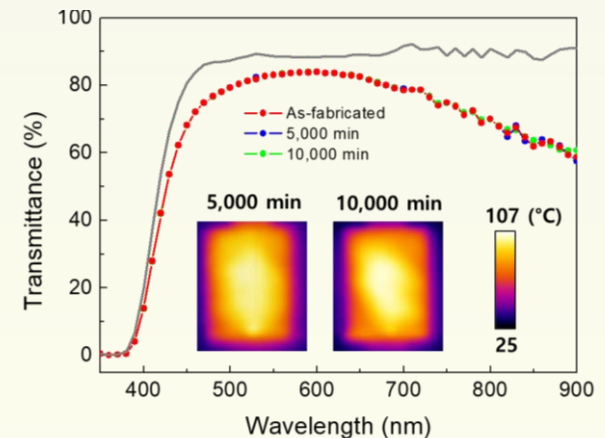
Transparent Electrodes for Optoelectronic Devices



Next-generation Semiconductor Interconnects



Low-voltage Operated Transparent Heaters



➤ We are seeking **performance breakthrough** through **innovative thin film research**

Lab Facility-1

Thin Film Deposition Systems

PLD system
(Pulsed Laser
Deposition)



E-Beam
evaporator



Magnetron sputter system
(DC/RF)



Mini sputter
(shared)



➤ Various thin film deposition systems in our lab

Lab Facility-2

Thin Film Processing Systems

Hume Hood



ICP Dry Etcher



Plasma surface treatment



Vacuum Furnace



Hot-air Drier



Lab Facility-3

Material Characterization Systems

FESEM (EDAX)



XRD



XPS



**Contact angle
measurement**



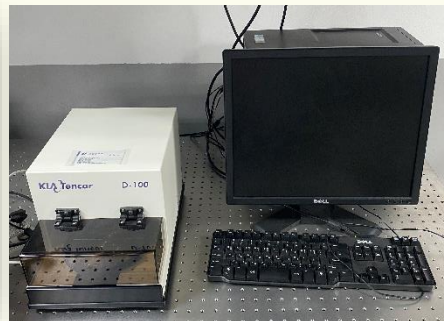
**UV/VIS/IR
Spectrophotometer**



AFM



Alpha-step



Goniometer



A lot more!