

The background features a large, light blue watermark of the Yonsei University logo. The logo is circular with the text 'YONSEI UNIVERSITY' around the top and '1885' at the bottom. In the center is a shield with a book, a lamp, and a central circle.

2023 Workshop

Yuna Lee

Introduce

**High-Speed Circuits & Systems Lab.
Dept. of Electrical and Electronic Engineering
Yonsei University**

Introduce

- 이름 : 이유나
- 학력
 - 2023년 8월 연세대 졸업예정
물리학과 본전공, 전기전자공학과 복수전공
 - 2023-2학기 연세대 전기전자공학과 대학원 입학
- 관심 분야 : 반도체 소자 & 공정



Subject of Research

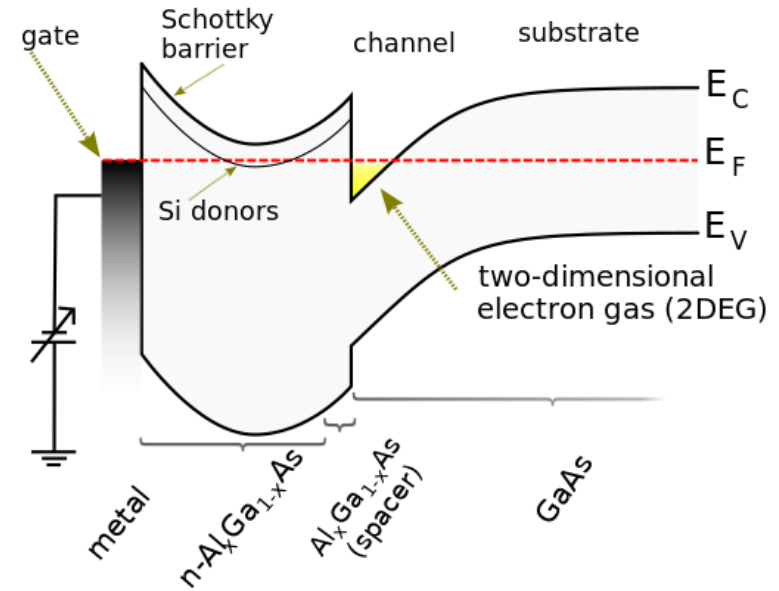
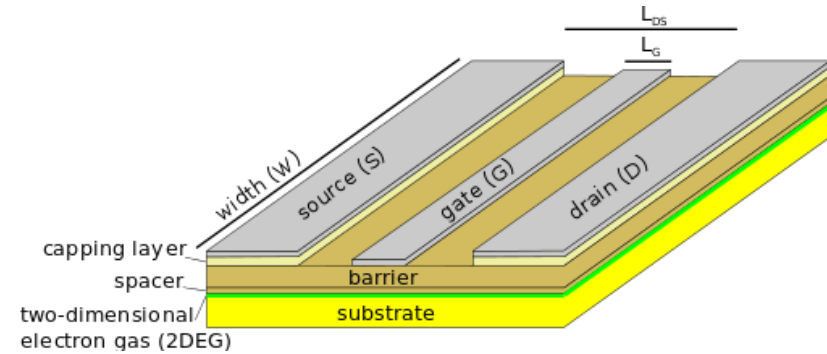
<Photo-HEMT & optoelectronic mixer>

● HEMT (High-Electron-Mobility Transistor)

- Using different bandgap materials
- 2D electron gas (2DEG)
- Impurity scattering $\downarrow \Rightarrow$ electron mobility \uparrow

● Optoelectronic mixer

- Efficient photodetection & high-speed transport

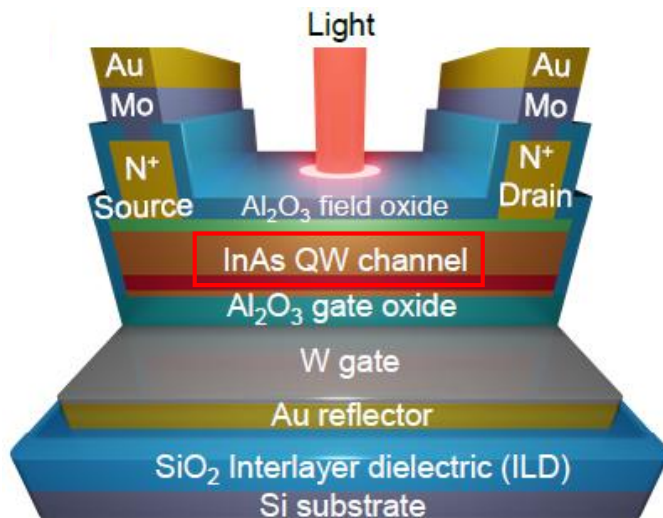


Band diagram of GaAs/AlGaAs heterojunction-based HEMT, at equilibrium

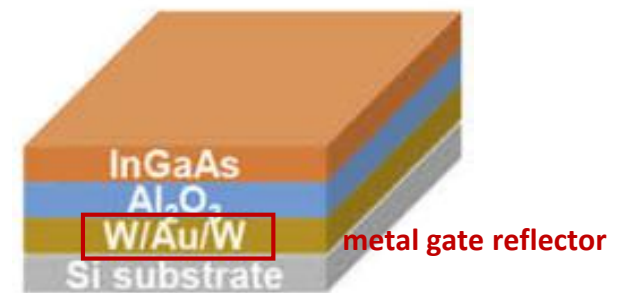
Content of Studying

- What I'm studying now...

<InAs QW photo-FET>



<Photo-FET w/ reflector>



Kang, Sooseok, et al. "Cavity-enhanced InGaAs photo-FET with a metal gate reflector fabricated by wafer bonding on Si." *Optics Express* 29.26 (2021): 42630-42641.

Ahn, DaeHwan, et al. "High-Responsivity InAs Quantum Well Photo-FET Integrated on Si Substrates for Extended-Range Short-Wave Infrared Photodetector Applications."

Thank you