

Special Topics on Basic EECS I

Design Technology Co-Optimization

Lecture 23

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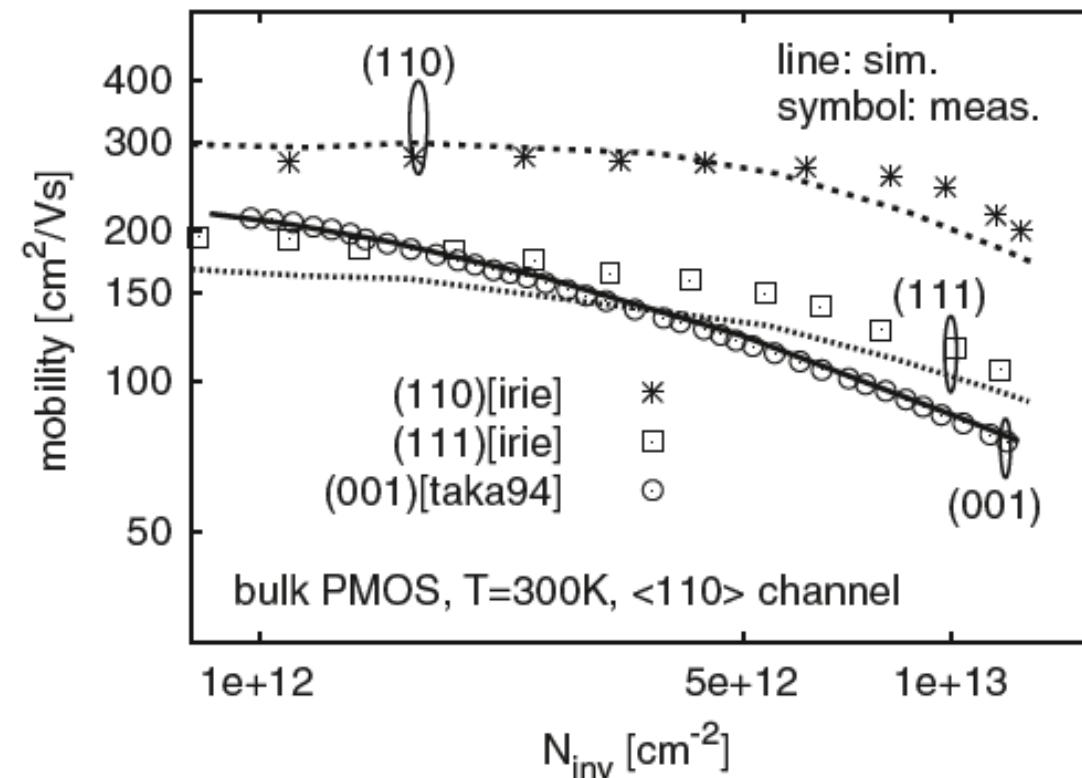
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L23

PMOSFET

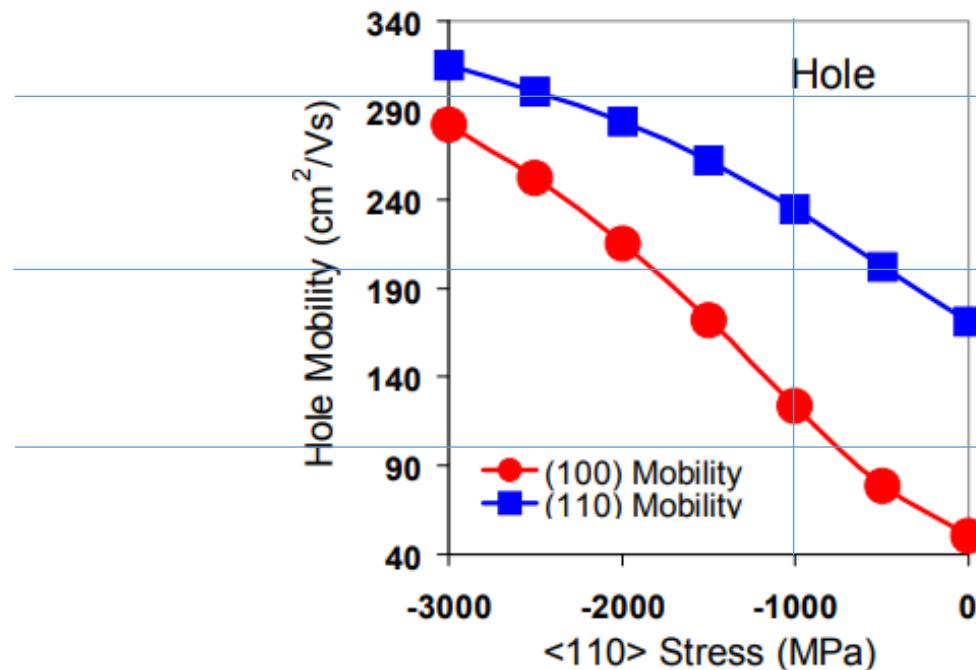
- Hole mobility for different surface orientations
 - The channel direction is $\langle 110 \rangle$.



Low-field mobility (Hong, Pham, and Jungemann)
GIST Lecture

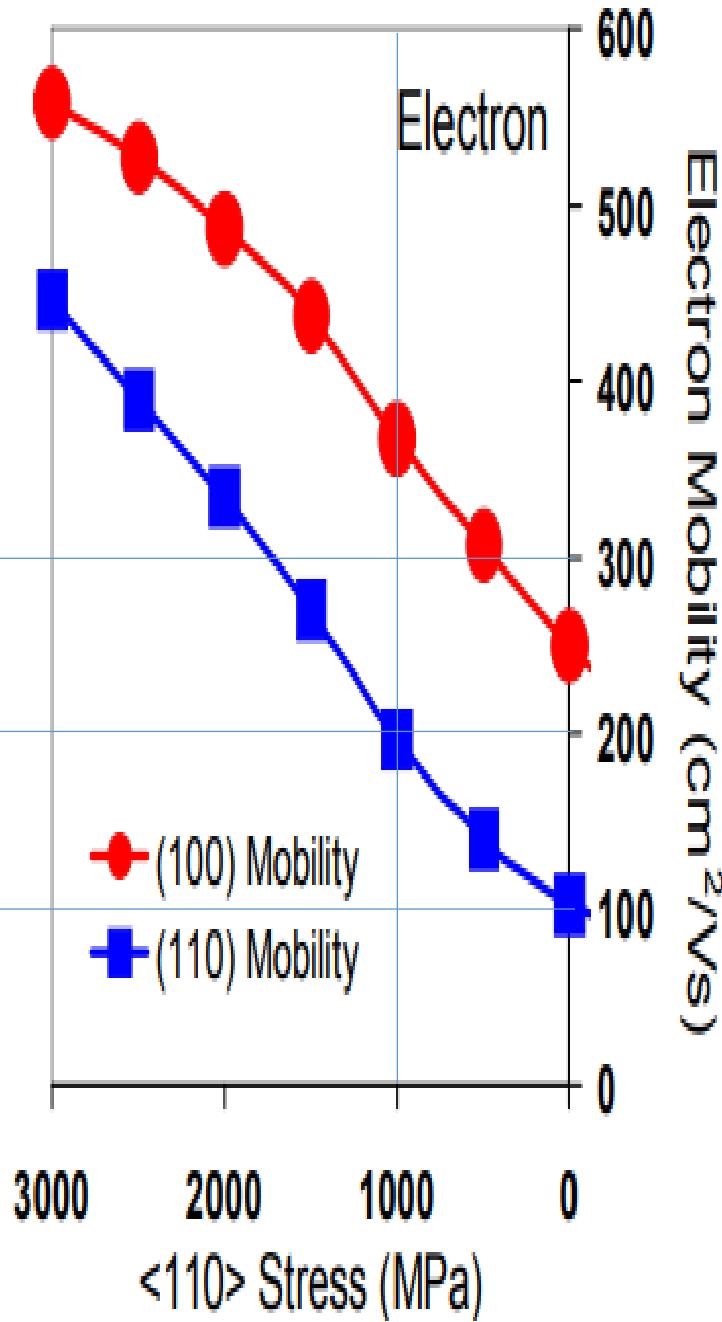
N/P unbalance issue

- Blue (FinFET)
 - Red (Nanosheet)



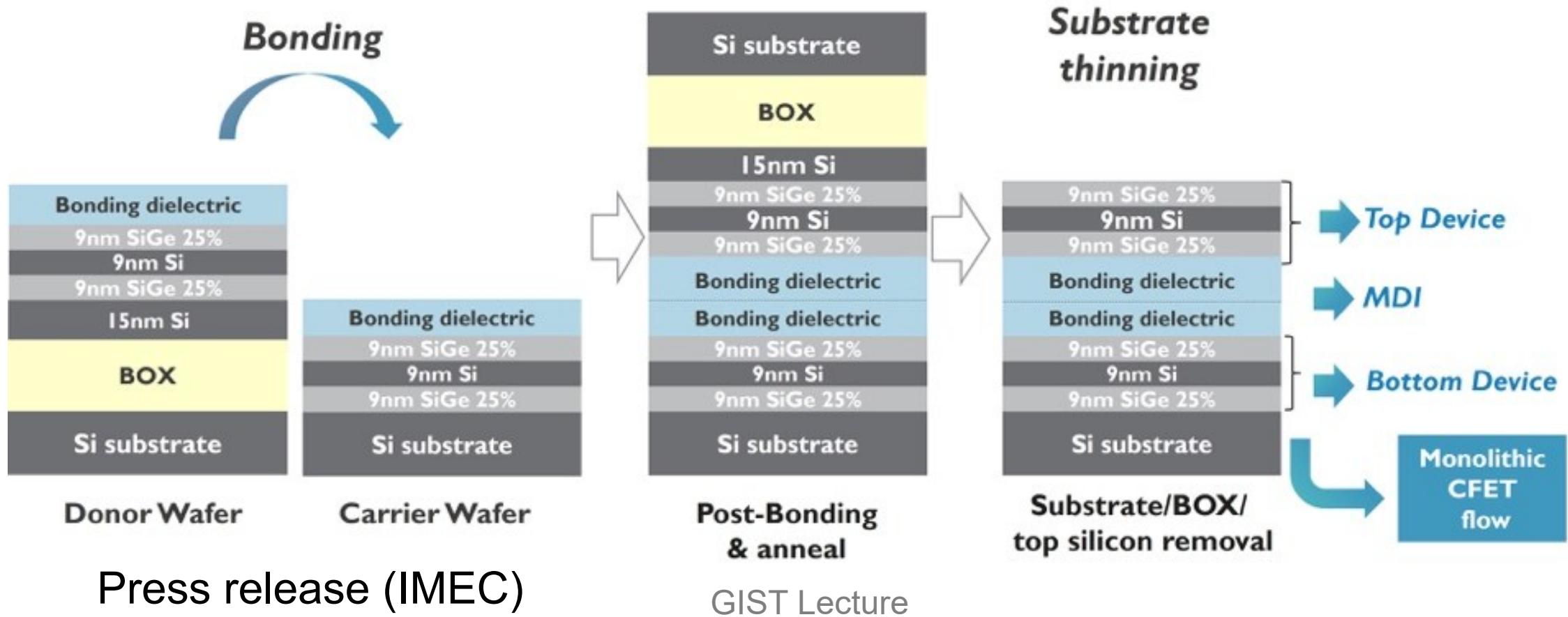
Simulated mobility as a function of stress
(P. Packan et al., Intel)

GIST Lecture



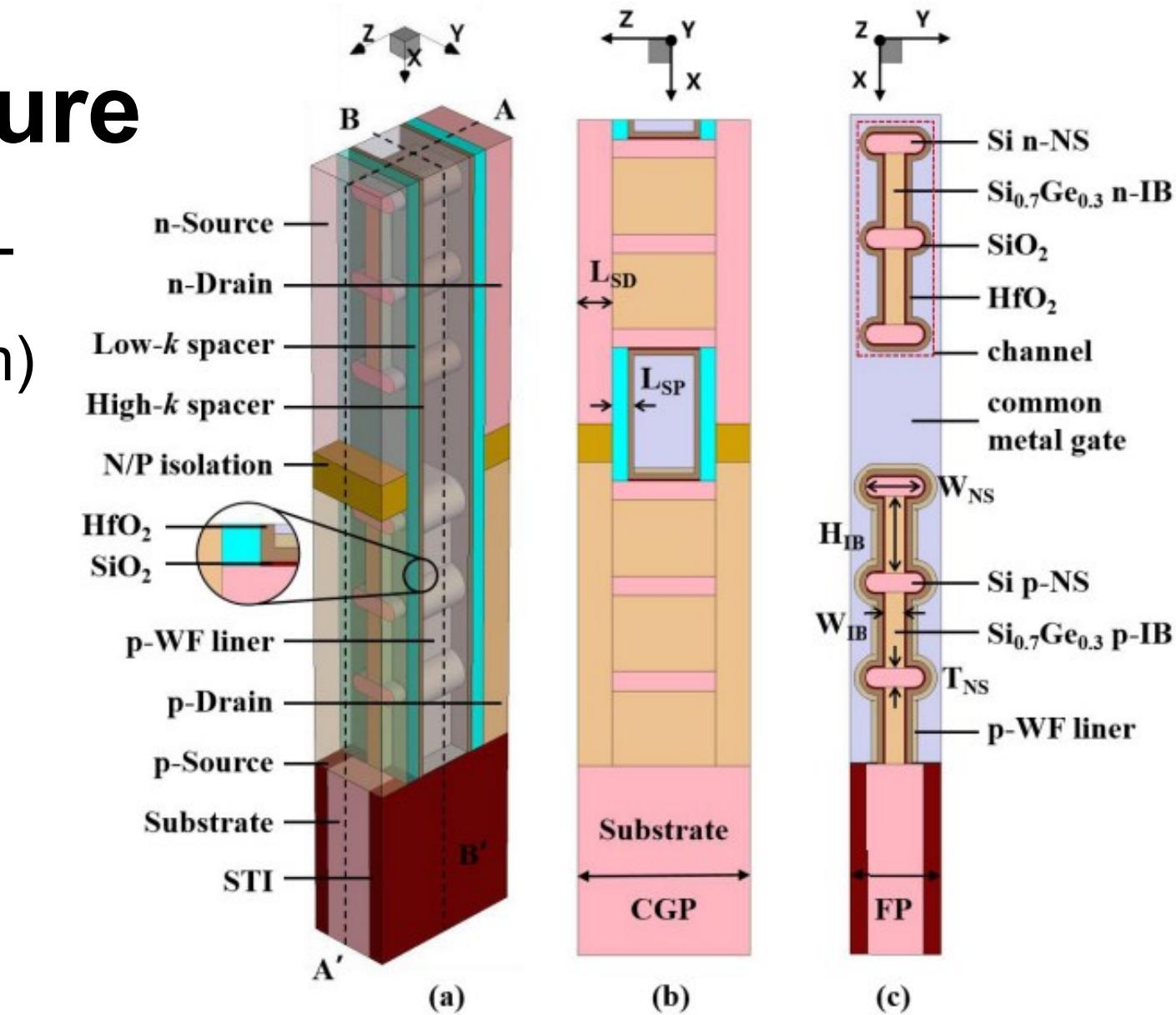
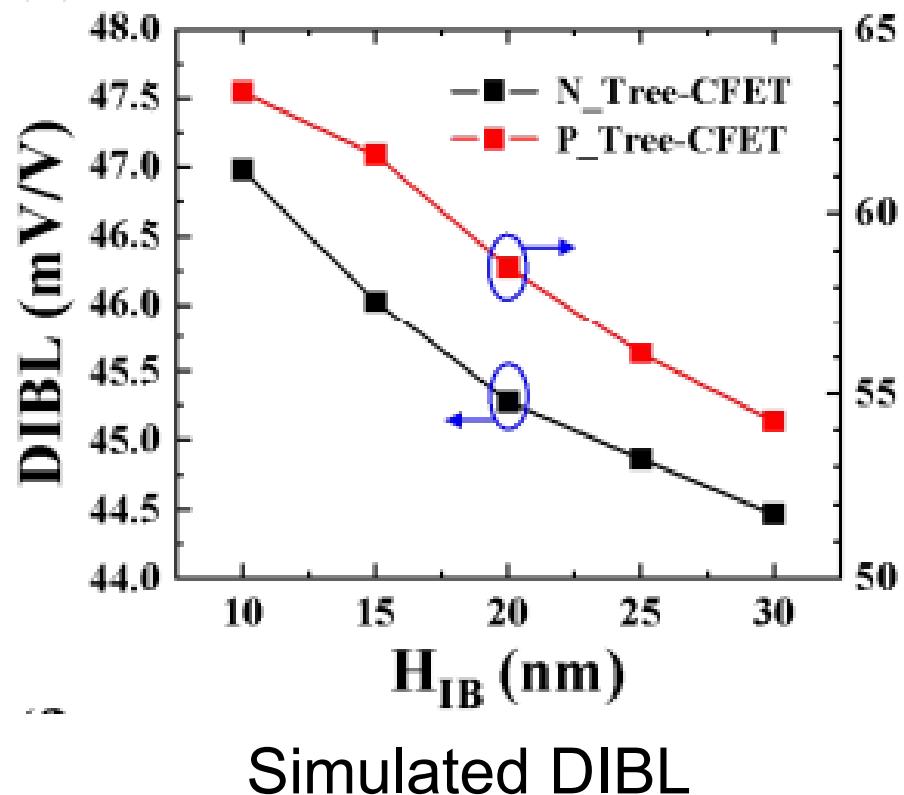
IMEC's presentation @ IEDM 2025

- 2.2 Hybrid channel monolithic-CFET with Si (110) pMOS & (100) nMOS



Alternative structure

- TreeFET & FishboneFET
 - Nanosheet ($15\text{nm} \times 5\text{ nm}$)
 - Interbridge



Structure of Tree-CFET (J. Zhao et al.,
East China Normal University)

Thank you!