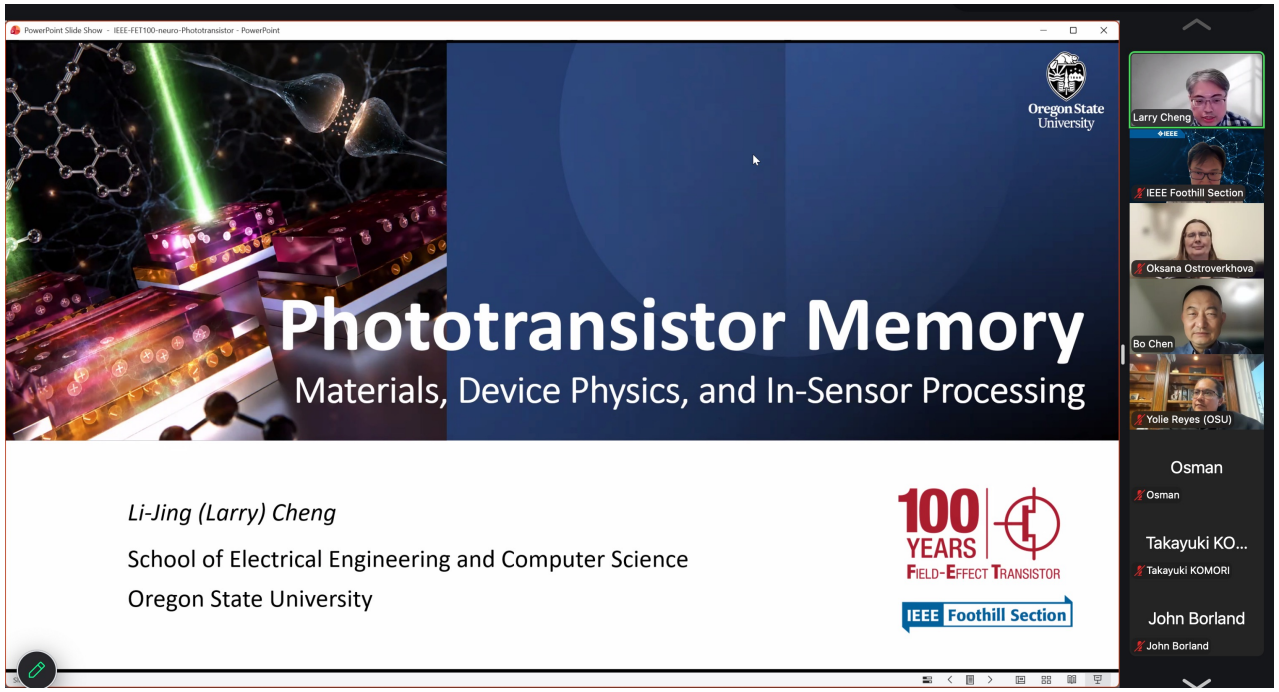
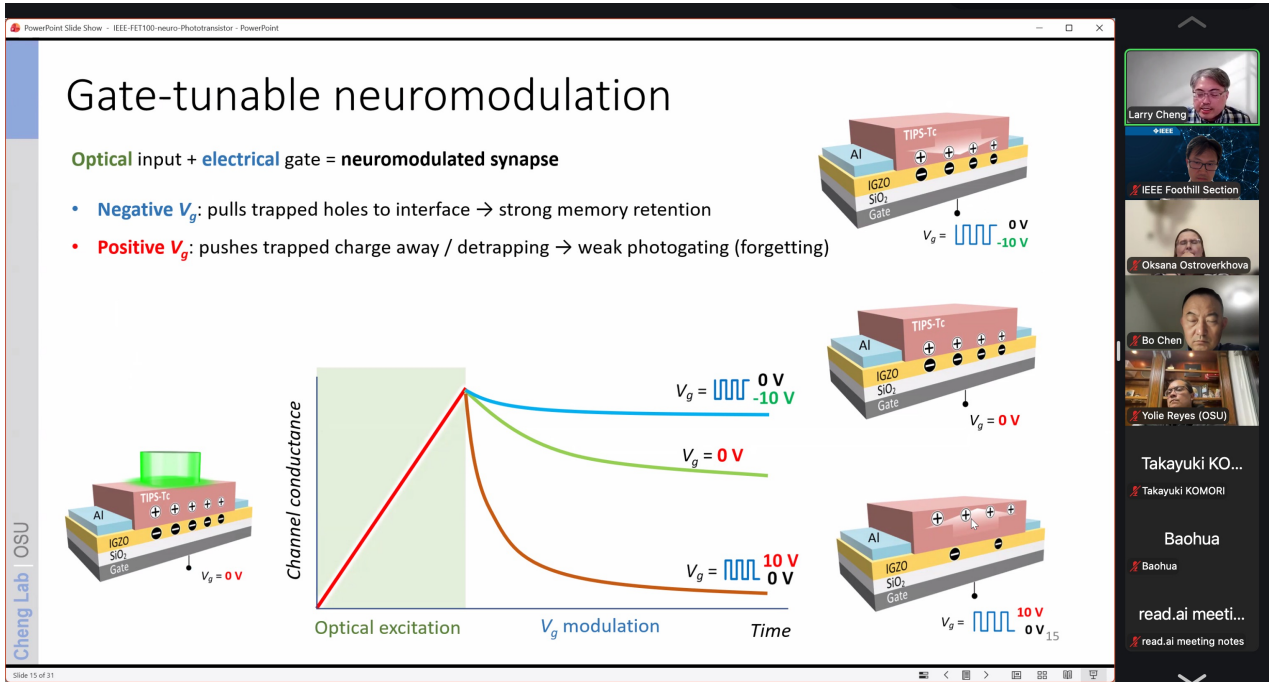

PowerPoint Slide Show - IEEE-FET100-neuro-Phototransistor - PowerPoint
Oregon State University
Phototransistor Memory
Materials, Device Physics, and In-Sensor Processing
Li-Jing (Larry) Cheng
School of Electrical Engineering and Computer Science
Oregon State University
100 YEARS FIELD-EFFECT TRANSISTOR
IEEE Foothill Section
Larry Cheng
IEEE Foothill Section
Oksana Ostroverkhova
Bo Chen
Yolie Reyes (OSU)
Osman
Takayuki KO...
Takayuki KOMORI
John Borland
John Borland

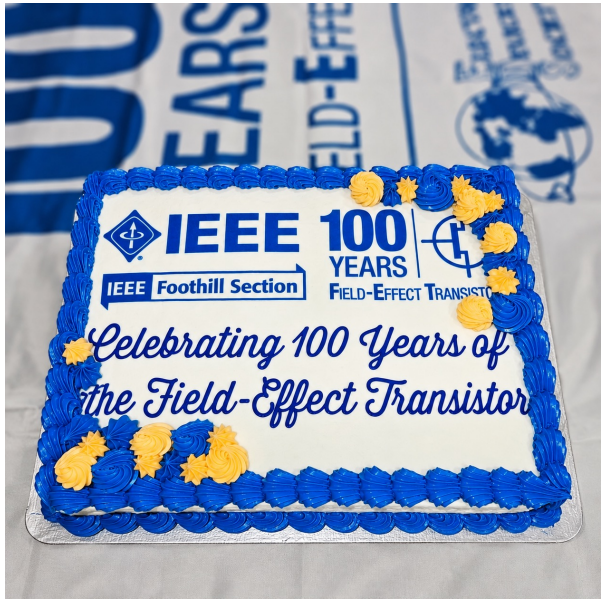

Mute
Larry Cheng
IEEE Foothill Section
Oksana Ostroverkhova
Bo Chen
Pallavi Dhagat
Osman
Shifat Hossen
Abad Vergara, Joaquin
Takayuki KOMORI
Baohua
S
Sarker, Tasnim
Takayuki KOMORI
Baohua
Samiur Rahman Khan
Sarker, Tasnim
Hsiang Yu Lin
Yu-Chung Chang
Yu-Chung Chang
Victor Manske


PowerPoint Slide Show - IEEE-FET100-neuro-Phototransistor - PowerPoint
Gate-tunable neuromodulation
Optical input + electrical gate = neuromodulated synapse
Negative $V_g$: pulls trapped holes to interface → strong memory retention
Positive $V_g$: pushes trapped charge away / detrapping → weak photogating (forgetting)
TIPS-Tc
Al
IGZO
$SiO_2$
Gate
$V_g$ = 0 V -10 V
$V_g$ = 0 V
$V_g$ = 0 V 10 V
Channel conductance
Optical excitation
$V_g$ modulation
Time
Cheng Lab | OSU
Slide 15 of 31
Larry Cheng
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Bo Chen
Yolie Reyes (OSU)
Takayuki KO...
Takayuki KOMORI
Baohua
Baohua
read.ai meeti...
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In Appreciation of Our FET-100 Speaker, Prof. Li-Jing Cheng ...
100 YEARS FIELD-EFFECT TRANSISTOR
In Appreciation of
Prof. Li-Jing Cheng
For his distinguished contribution to the IEEE EDS FET100 Seminar Series. We sincerely appreciate his expertise, inspiring presentation, and support of our celebration of 100th anniversary of the Field-Effect Transistor.
"Phototransistor Memory: Materials, Device Physics, and In-Sensor Processing"
October 2026
ELECTRON DEVICES SOCIETY
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EDS/CASS Joint Chapter


IEEE
100 Year Field Effect Transistor Anniversary
100 YEARS
FIELD-EFFECT TRANSISTOR
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100 YEARS
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100 YEARS
FIELD-EFFECT TRANSISTOR
Celebrating 100 Years of the Field-Effect Transistor


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