

# Transparent Semiconducting Oxide Technology for Touch Free Interactive Flexible Displays

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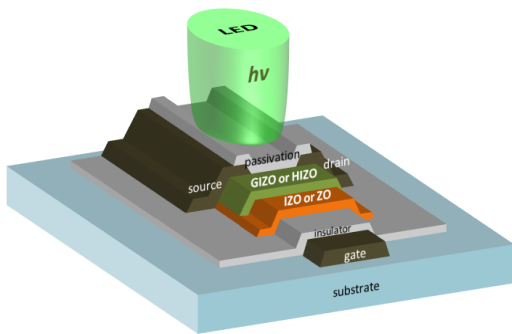
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## Introduction

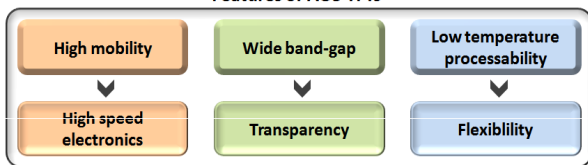
- Oxygen defect ionized under visible light, leading to persistent photoconductivity (PPC), thus a high sensitivity photosensing operation in oxide TFTs.
- Ionized oxygen defects recombined with induced electrons under positive gate pulse, thus reset.

## Results and Discussions

- Features of oxide TFTs for optoelectronics:

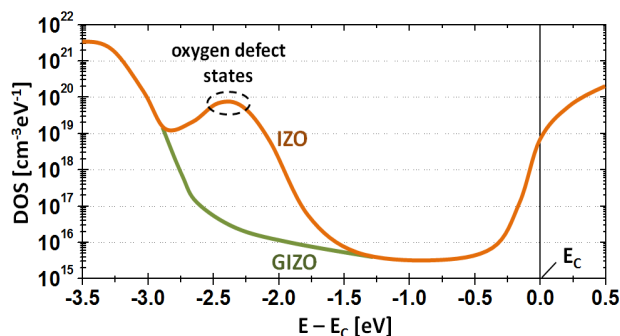


Features of AOS TFTs

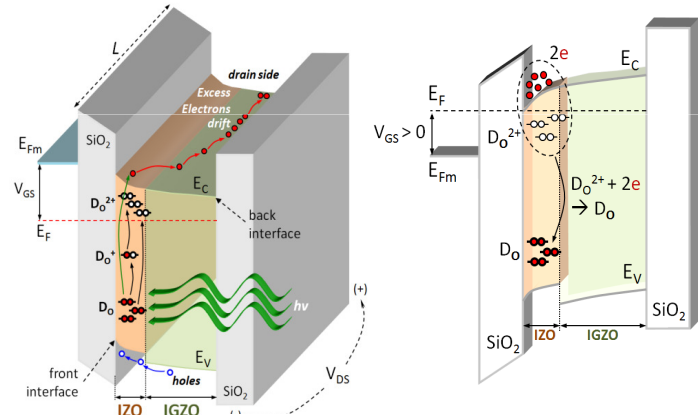


Photosensing Capability due to Presence of Oxygen Defects

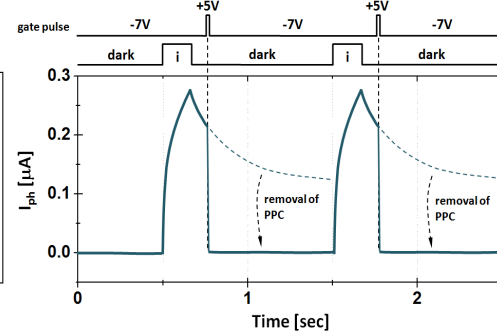
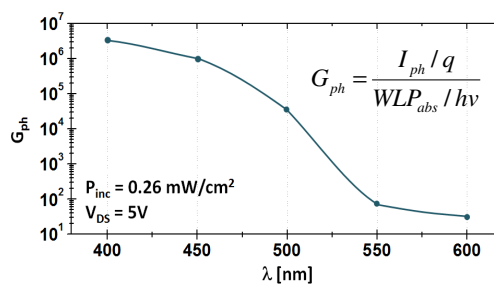
Image Sensors embedded Transparent Flexible Display



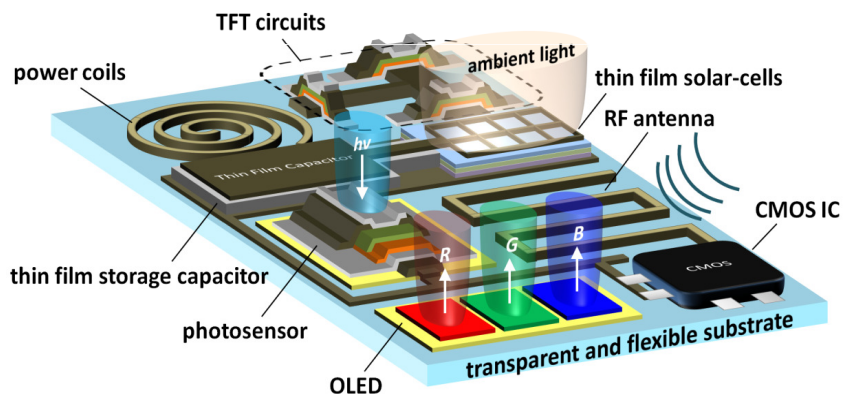
- Oxygen defect ionization and recombination:



- Photoconductive gain:



- Perspective of the futuristic electronic systems:



## Conclusion

- Transparent image sensor realized in oxide TFTs.
- Oxygen defects allowed to detect visible lights.
- Bilayer channel structure optimized for the photosensing as well as enhancement mode operations.