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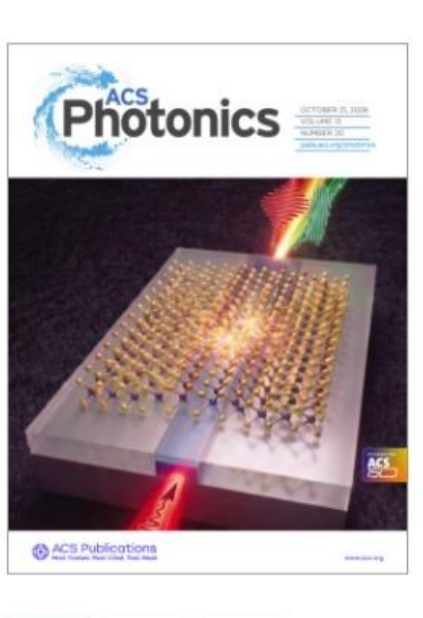

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Decade 2020 Year 2026 Issue October 21, - Volume 13, Issue 20, Pages 5990 - 6301

Volume 13, Issue 20

October 21, 2026

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About the Cover

A silicon nitride integrated waveguide loaded with a monolayer of MoS_2 is illustrated as a platform for vectorially engineered second-harmonic generation. A TE-polarized pump field (red) propagates through the waveguide and interacts with the strong second-order nonlinear susceptibility of the two-dimensional material, generating a TM-polarized second-harmonic signal (green). The artwork highlights the interplay between guided-wave photonics, nonlinear optics, and atomically thin materials that enables frequency conversion through hybrid integration and vectorial phase matching. The cover artwork was created through an iterative design process using Google Gemini 3.5 Flash Extended based on the authors' original table of contents graphic and scientific concept. The AI-generated artwork was subsequently edited and finalized by the authors using Inkscape. View the article.

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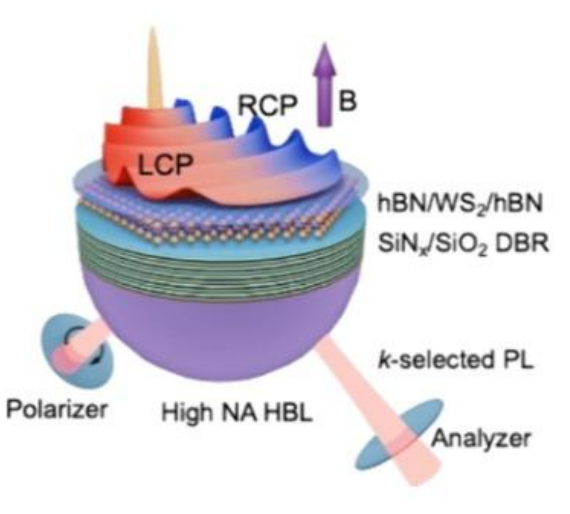

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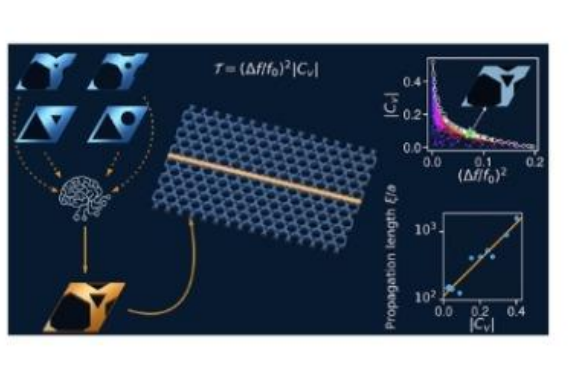

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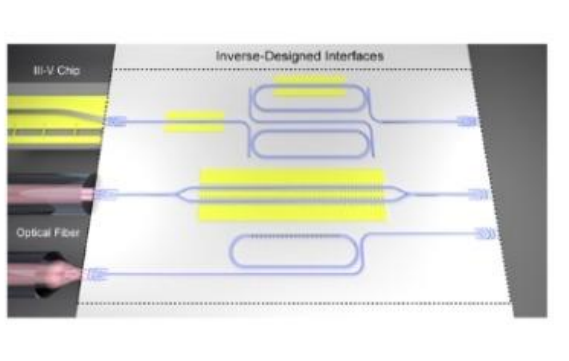

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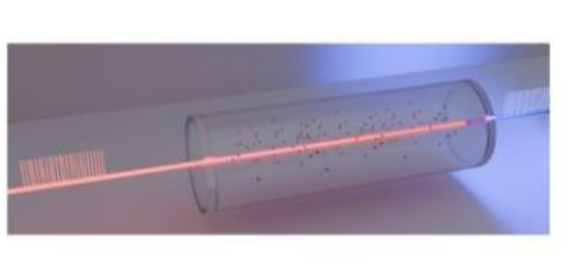

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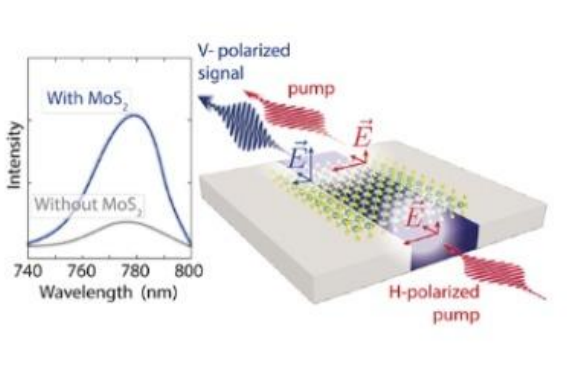

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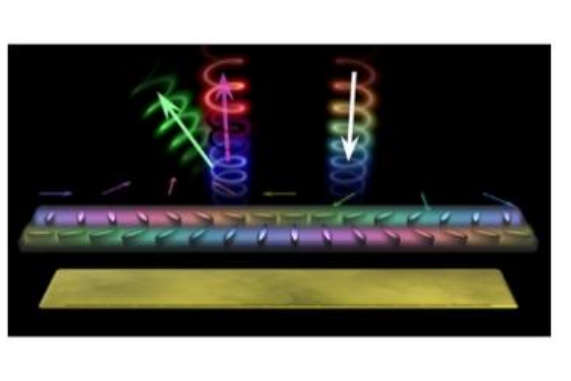

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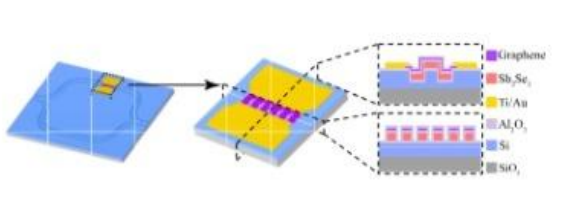

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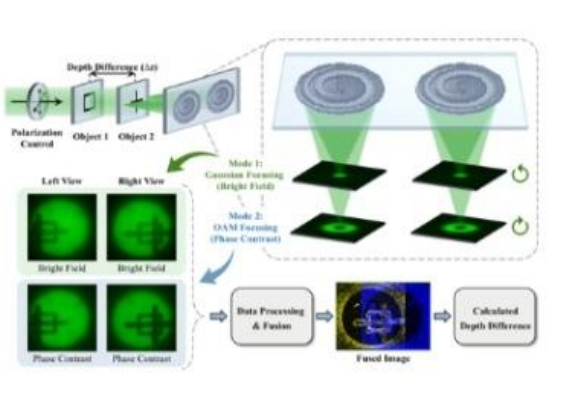

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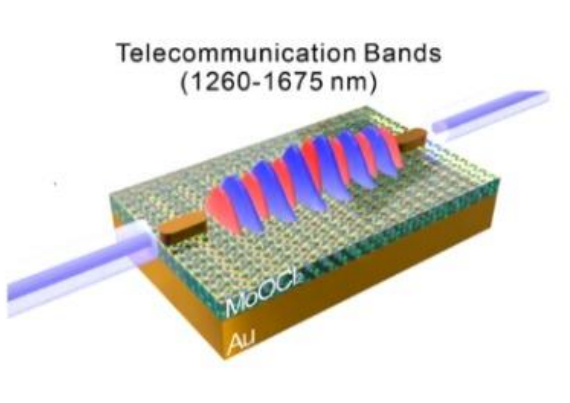

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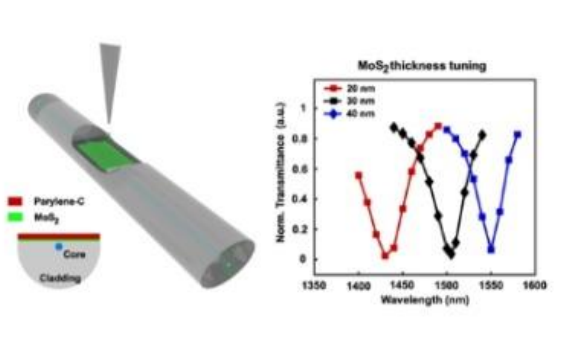

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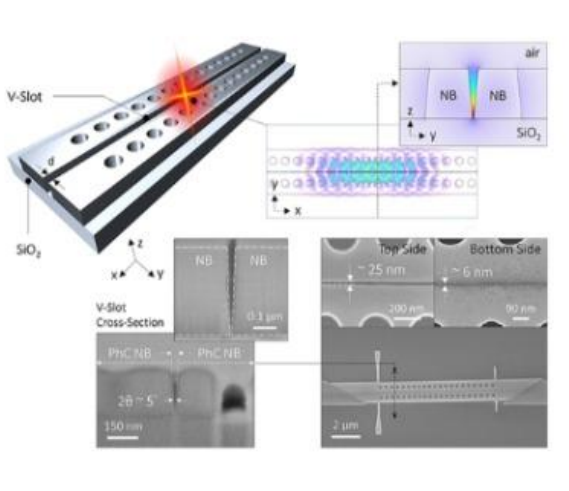

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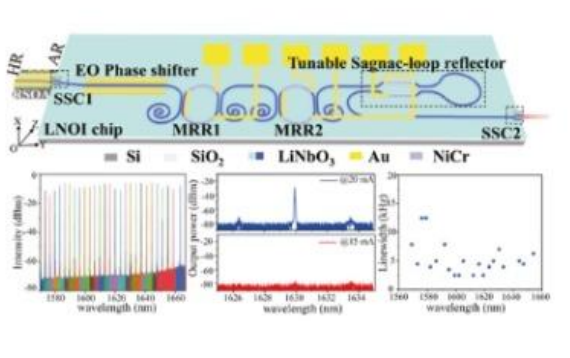

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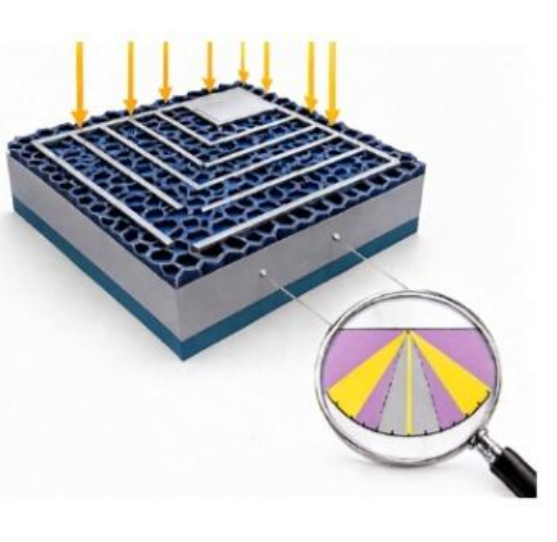

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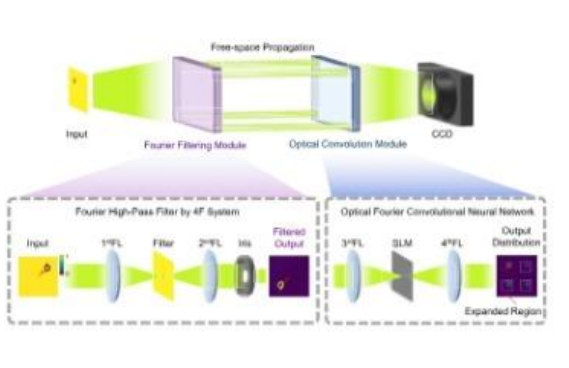

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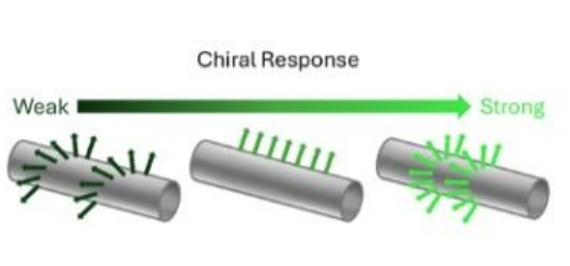

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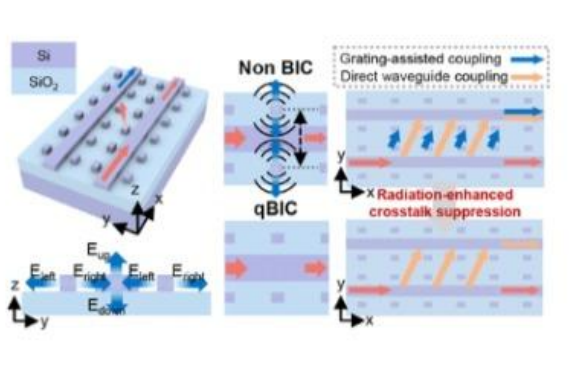
Si
SiO₂
Non BIC
qBIC
Grating-assisted coupling
Direct waveguide coupling
Radiation-enhanced crosstalk suppression

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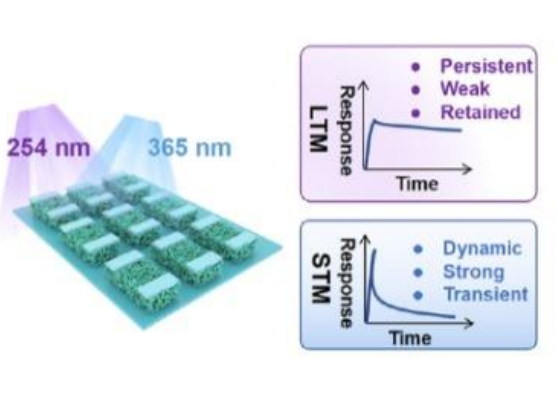

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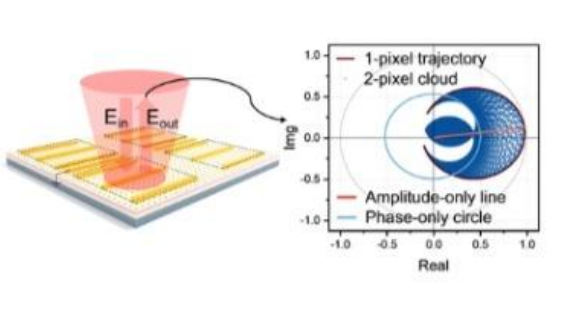

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GaSb–TFLN Hybrid Integrated Pockels Laser for Ultrafast Spectroscopy in the 2 μm Waveband

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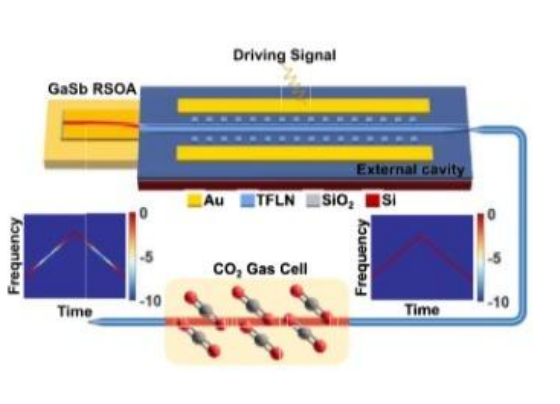

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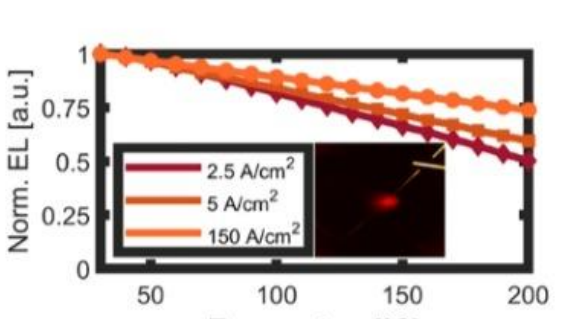

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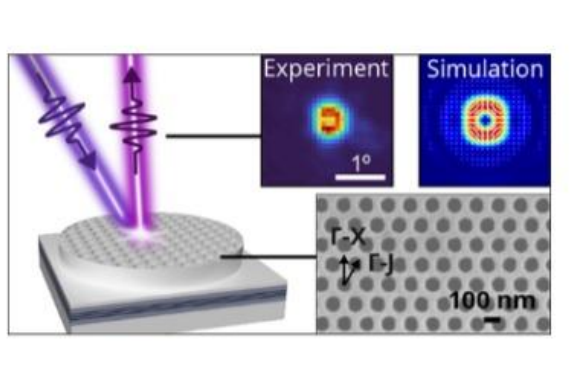

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Sub-Picosecond Optical Dynamics in Perovskite $NdNiO_3$ Thin Films via Broadband Pump–Probe Ellipsometry

Yael Gutiérrez; Ranjan Kumar Patel; Saúl Vázquez-Miranda; Mateusz Rebarz; Shirly Espinoza; Yeonghoon Jin; Mikhail A. Kats; Shriram Ramanathan

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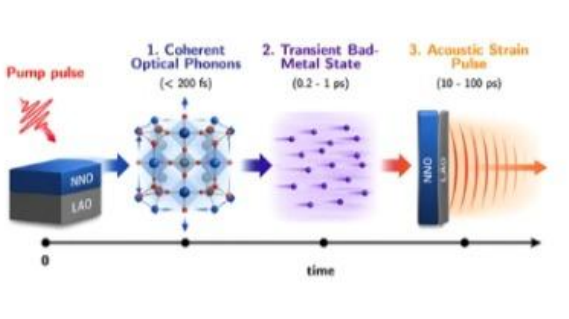
Pump pulse
1. Coherent Optical Phonons (< 200 fs)
2. Transient Bad-Metal State (0.2 - 1 ps)
3. Acoustic Strain Pulse (10 - 100 ps)
time

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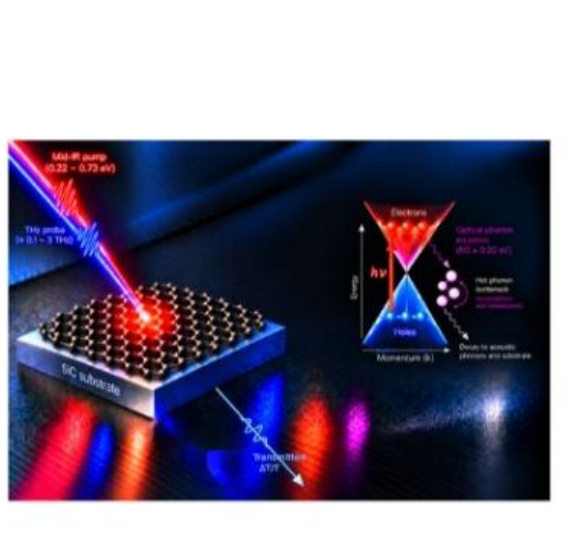

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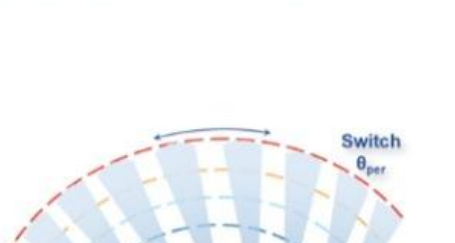

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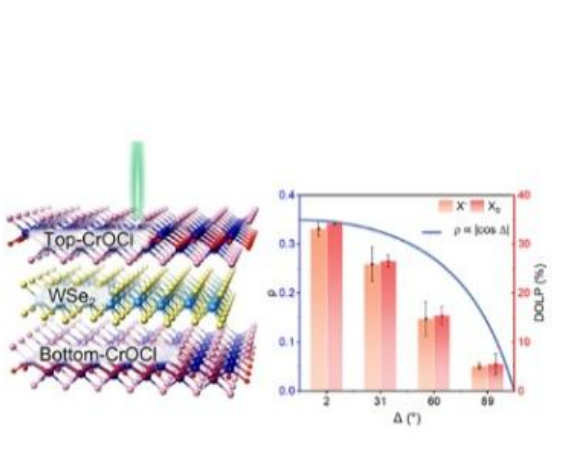

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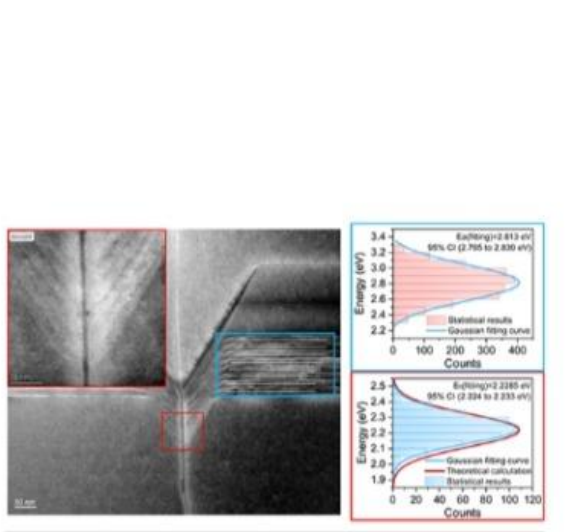

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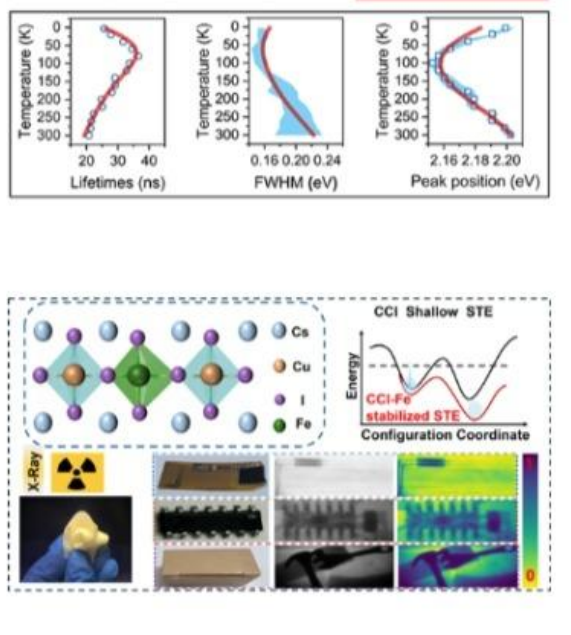

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Strain-Decoupled Flexible InAs CQD SWIR Imager for Through-Silicon Photovoltaic Inspection

Youcef A. Bioud; Ali Alrashoudi; Dhay AlBeladi; Tariq Sheikh; Sawsan A. Daws; Kseniia Kosolapova; Valentina-Elena Musteata; Mutalifu Abulikemu; Omar F. Mohammed; Osman M. Bakr

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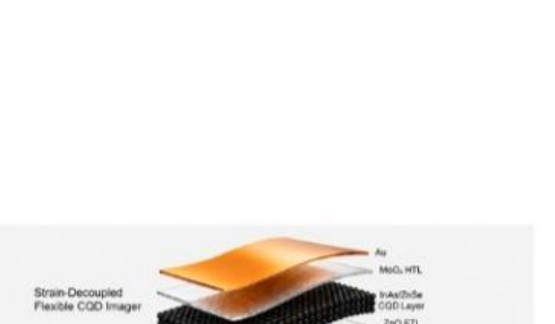
Strain-Decoupled Flexible CQD Imager
PV Cell Inspection
Artificial Vision Concept
Through-Silicon Imaging

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Domain-Selective Enhancement of Second Harmonic Generation in Monolayer MoS_2 via Ferroelectricity-Controlled Photodoping

David Hernández-Pinilla; Line Jelver; María Jesús Martínez-Morillo; César Hernando-Fuente; Miguel Cherta Garrido; Guillermo López-Polin; Joel D. Cox; Luisa E. Bausá; Mariola O. Ramírez

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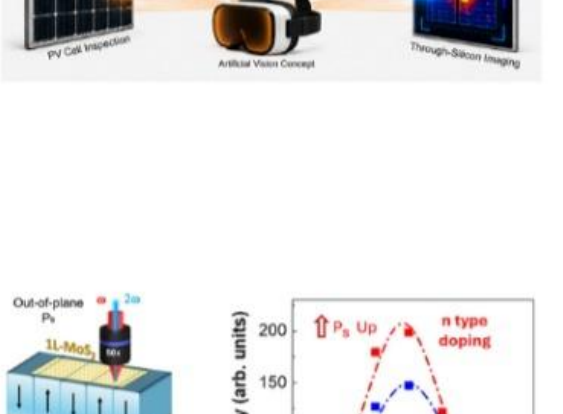

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Intrinsic Photoresponses of As-Exfoliated Few-Layer MoS_2 Phototransistors

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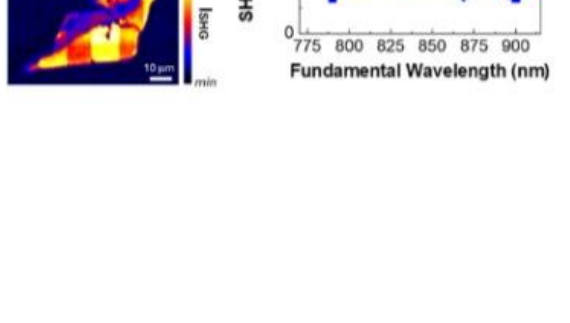

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Resonance-Tuned Plasmon–Phonon Hybridization in Continuous Bilayer Graphene

Sunghyun Hwang; Eui-Hyoun Ryu; Sanghyub Lee; Nayeon Kim; Ji-Hwan Son; Nayoung Kim; SeokJae Yoo; Young Hee Lee; In-Ho Lee; Sang-Hyun Oh

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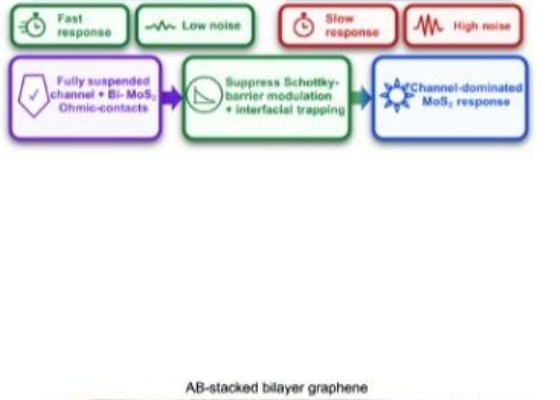

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