

TOSHIBA CORPORATION

Basic Corporate Data

Company Name: TOSHIBA CORPORATION
Headquarters Address: 1-1, Shibaura 1-chome, Minato-ku, Tokyo, Japan
Founded: July 1875
Common Stock: ¥439,901 million (US\$4,271 million)
Total Assets: ¥6,241,623 million (US\$60,598 million)
Net Sales: ¥6,502.5 billion (US\$63,131 million)
Number of Employees: 200,260
Number of Shares issued: 4,237,600,000 shares

Business Groups

Energy & Infrastructure Group



Community Solutions Group



Healthcare Systems & Services Group



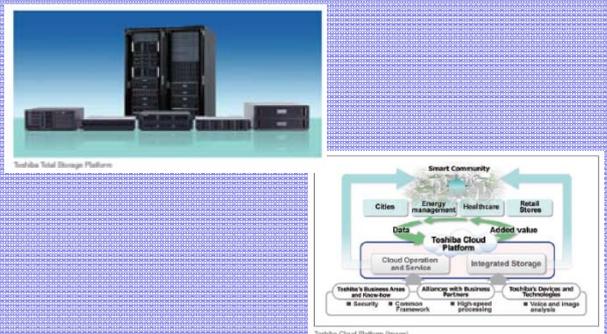
Electronic Devices & Components Group



Lifestyle Products & Services Group



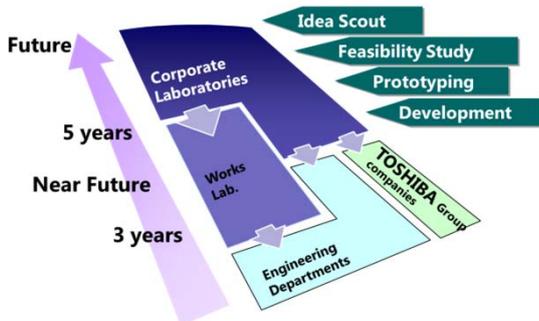
Cloud & Solutions Company



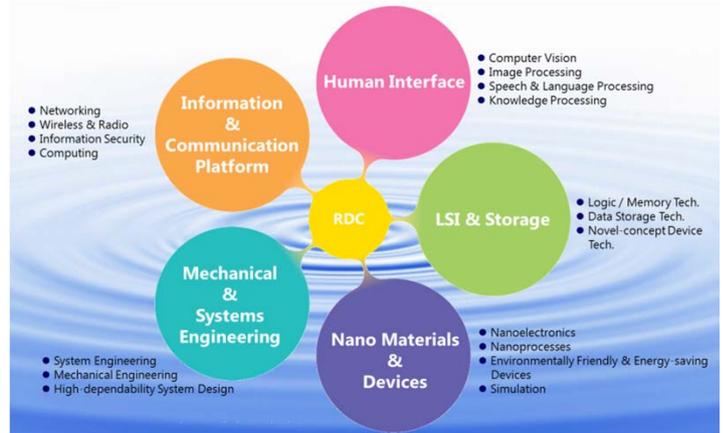
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Introduction to Corporate Research & Development Center

■ Missions and Research Fields



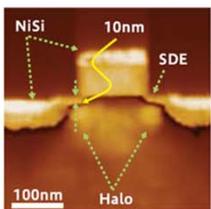
Corporate laboratories are responsible for R&D for future products of Toshiba and Toshiba group companies.



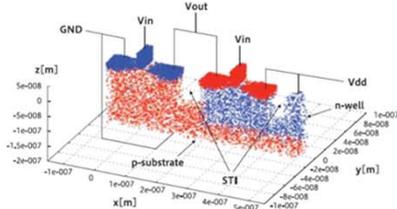
5 Research Fields and Core Technologies in RDC.

Examples of R&D items for LSI and nanotechnology fields

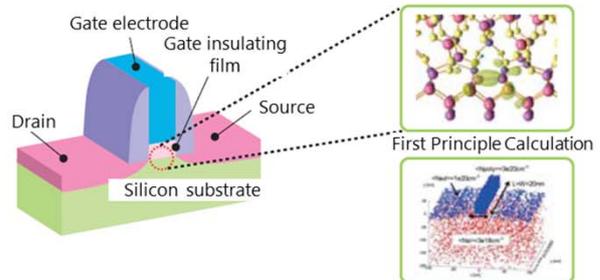
Nanotechnology for LSIs and Data Storage



Electrical Characterization of Device Cross-section

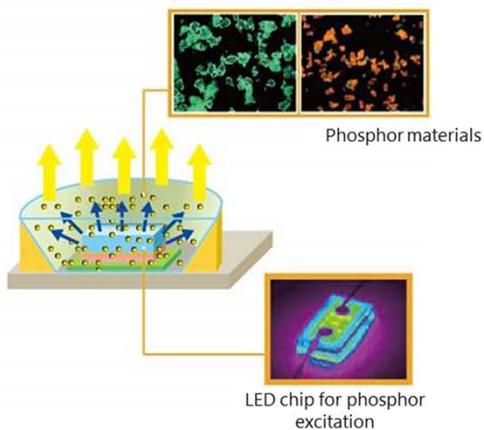


3D TCAD Simulation



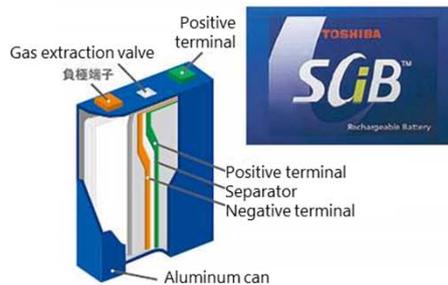
TCAD Device Simulation

Solid-state Lighting



GaN on Si substrates for more efficient LEDs.

Next-generation SCiB™ Rechargeable Battery



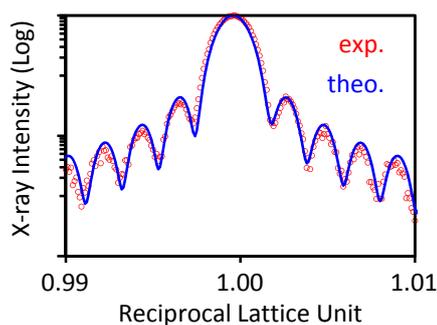
New type of Lithium ion batteries with Li-Ti oxide anode materials.

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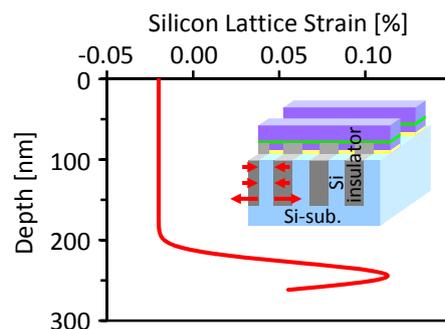
Reserch & Development using Synchrotron Radiation

High Precision Strain Analysis of Nano-Scale Cells in NAND Memories

X-ray crystal truncation rod (CTR) method reveals small strains in nano-scale memory cells which influence a data retention property.



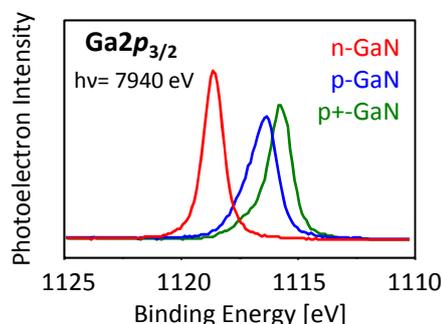
CTR pattern of NAND Cell



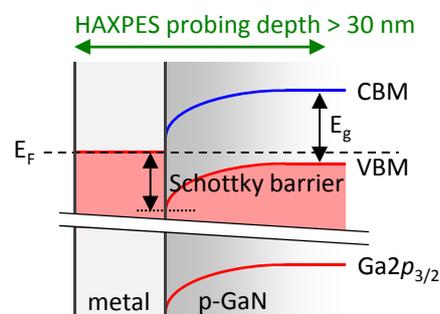
Strain profile of NAND Cell

Energy Band Profile Analysis of Metal-Semiconductor Interface for LEDs

Hard X-ray Photoelectron Spectroscopy (HAXPES) gives energy band profiles at metal/GaN which are key points for low power consumption.



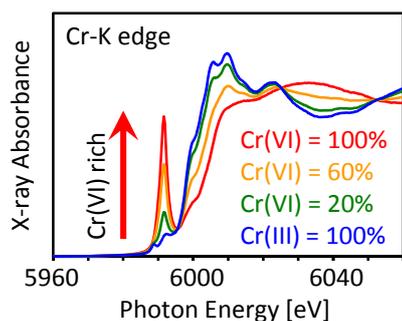
Ga2p_{3/2} spectra of metal/GaN samples



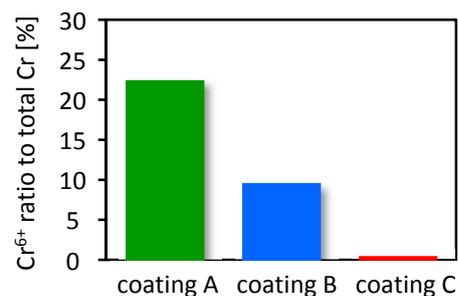
Energy band profile of metal/p-GaN

Quantitative Analysis of Hexavalent Chromium in Products for RoHS Directive

X-ray Absorption Fine Structure (XAFS) method gives a precise ratio of Cr⁶⁺ in chromate conversion coatings with non-destructive.



Cr-K XAFS spectra of CrOx references



Cr⁶⁺ ratio of different coating samples