

Material Innovation Area

<http://crystal.pwr.eng.osaka-u.ac.jp>



Professor
Mori Yusuke



Associate Professor
IMANISHI Masayuki



Associate Professor
(Concurrent post)
MARUYAMA Mihoko



Assistant Professor
USAMI Shigeyoshi

Professor (Concurrent post)
YOSHIMURA Masashi

Professor Emeritus
SASAKI Takatomo

In cutting-edge technology, the evolution of hardware as well as software brings the innovation. The ultimate hardware technology is the "crystal", the only one that can control electrons and light. Yusuke Mori Lab. is leading the world in researching "crystals". With the arrival of smart society by the Internet of Things (IoT), AI and 5G will be the foundations. Yusuke Mori Lab. manufactures crystals that are indispensable for the realization of AI and crystals that accelerate 5G. We are also conducting research on linking meteorites with urethral stones and drug discovery by investigating crystals.

Growth of large-diameter and high-quality GaN wafers
by the Na-flux method [Click!](#)



φ 2-inch GaN wafer

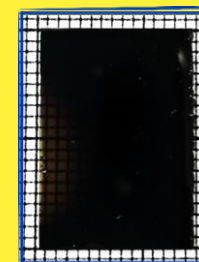


GaN crystal growth equipment for
high-temperature
and high-pressure condition

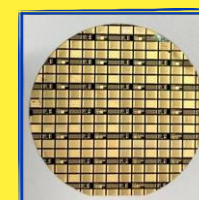
Fabrication of high-quality and low-cost GaN wafers
by Oxide Vapor Phase Epitaxy [Click!](#)



OVPE growth reactor



GaN crystal grown by OVPE



Devices fabricated on the
2-inch OVPE-GaN wafer

Nonlinear optical crystal crystals for UV laser [Click!](#)

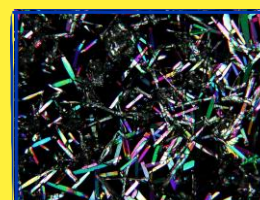


Furnace for CLBO crystal growth

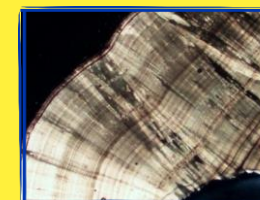


CLBO crystal

Engineering of the crystals related to human health [Click!](#)



Crystals of a pharmaceutical compound
"aspirin"
(Observed by a polarizing microscope)



Human kidney stone
(A cross section image observed by a
polarizing microscope)