## Y. OKABE LAB.

## Structural Health Diagnostic Systems



Department of Mechanical and Biofunctional Systems Center for Integrated Underwater Observation Technology

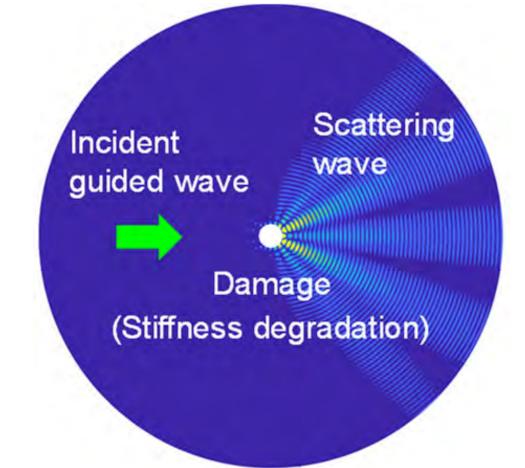
Structural Health Diagnostics

Department of Systems Innovation, Graduate School of Engineering

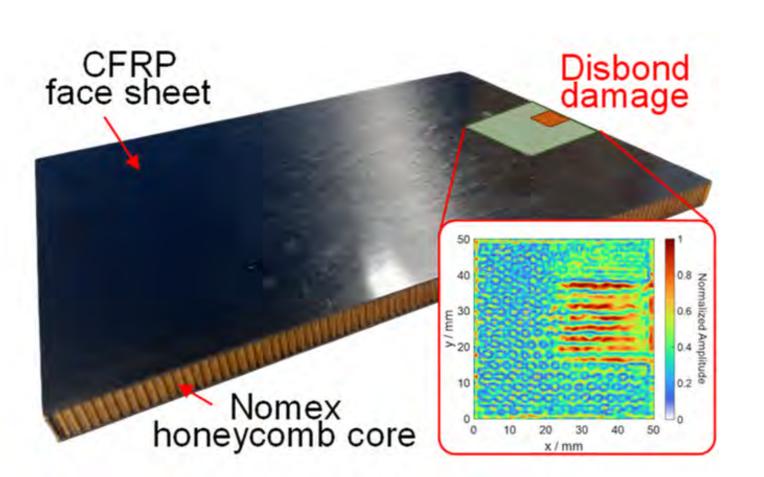
http://www.okabeylab.iis.u-tokyo.ac.jp/

Lightweight composite structures have been applied to airplanes and automobiles. For the health diagnostics of the structures, we are developing structural health monitoring systems with optical fiber ultrasonic sensors and non-destructive inspection techniques using laser ultrasonics. In addition, we are attempting to construct an inspection system applicable to extreme environments.

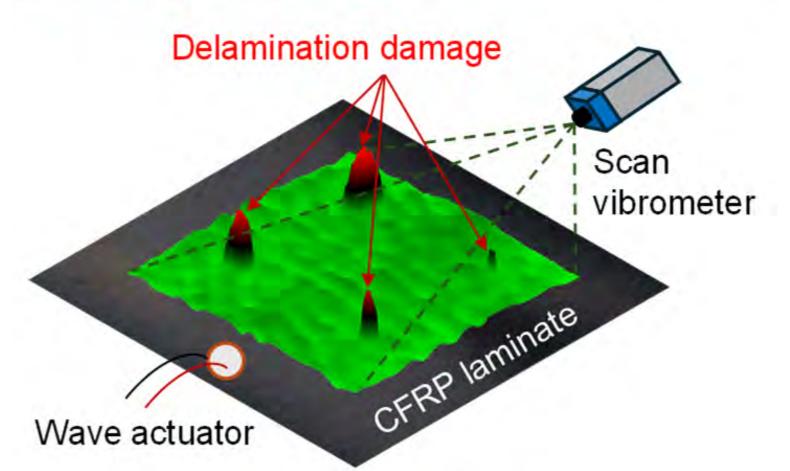
## Structural Health Monitoring Using Ultrasonic Guided Waves



Calculation of scattering wave at an impact damage in CFRP based on thin plate theory

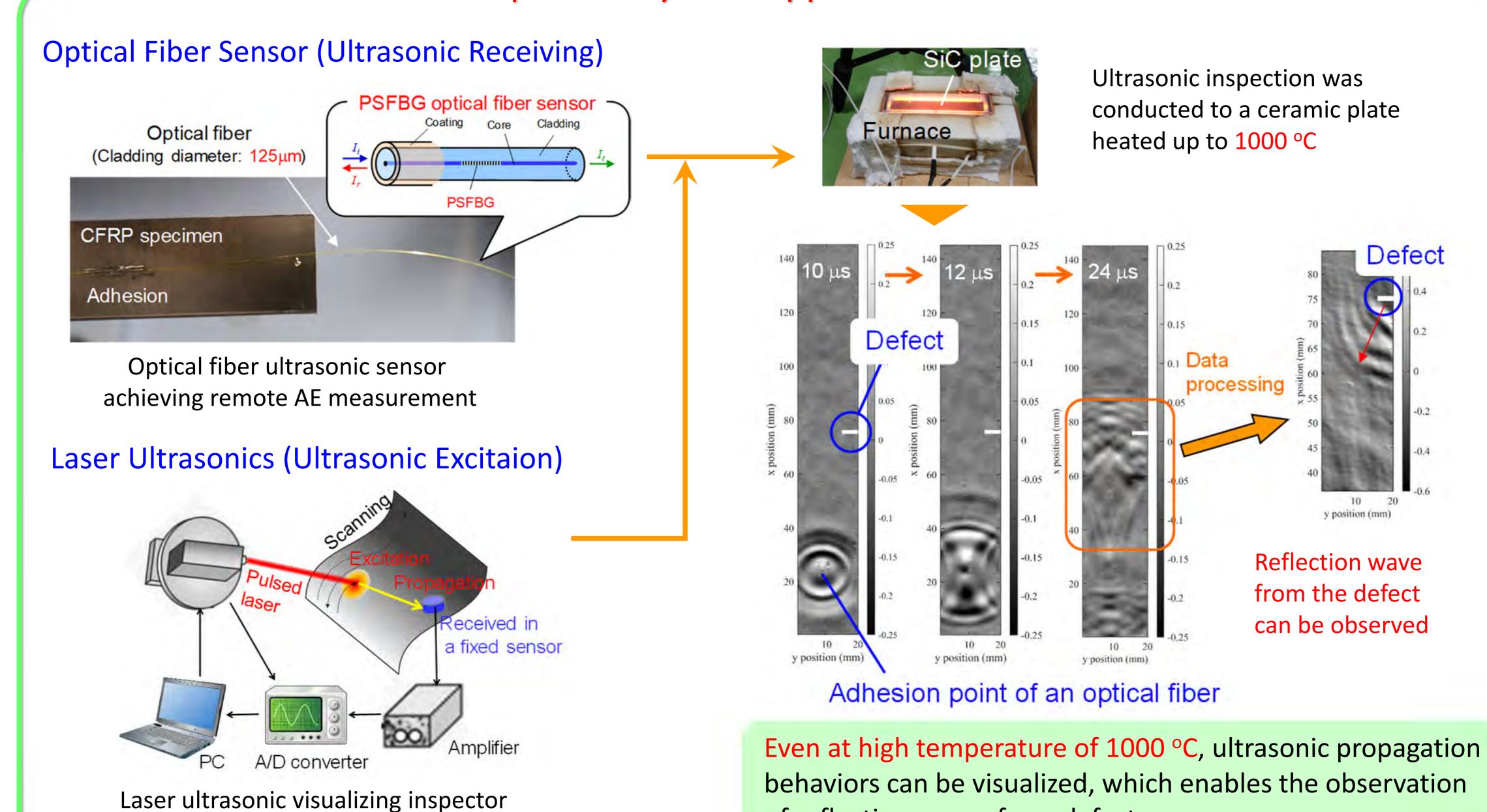


Damage detection in honeycomb sandwich structures using laser-excited ultrasonic guided waves



Delamination detection in a CFRP laminate based on guided wave-activated local defect resonance

## Non-destructive Inspection System Applicable to Extreme Environments



(LUVI-CP, Tsukuba Technology Co., Ltd.)

of reflection waves from defects