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OKABE, Y. LAB.

[Health monitoring systems for composite structures based on ultrasonics]

Department of Mechanical and Biofunctional Systems

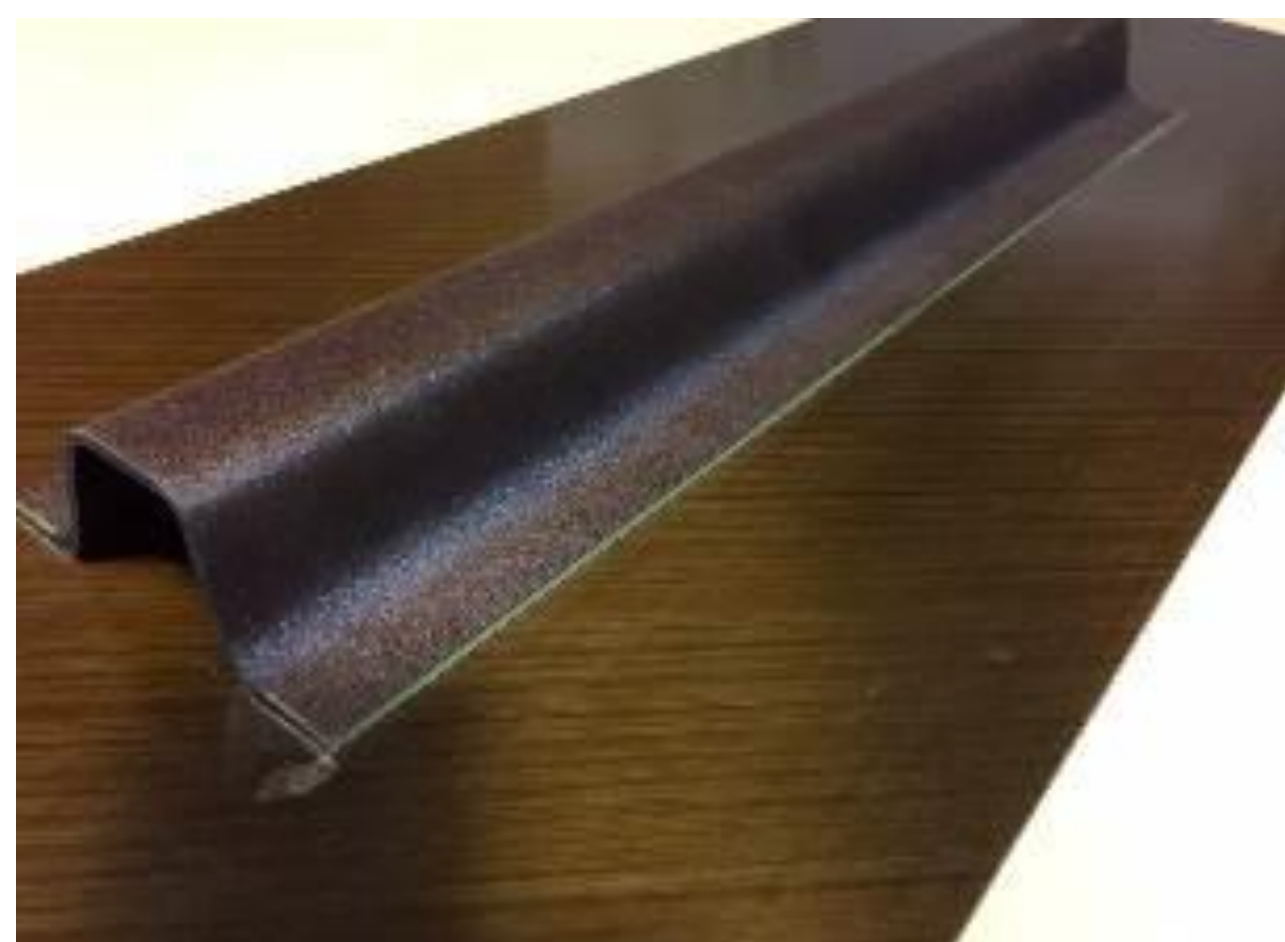
Smart Material Systems

Department of Systems Innovation

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

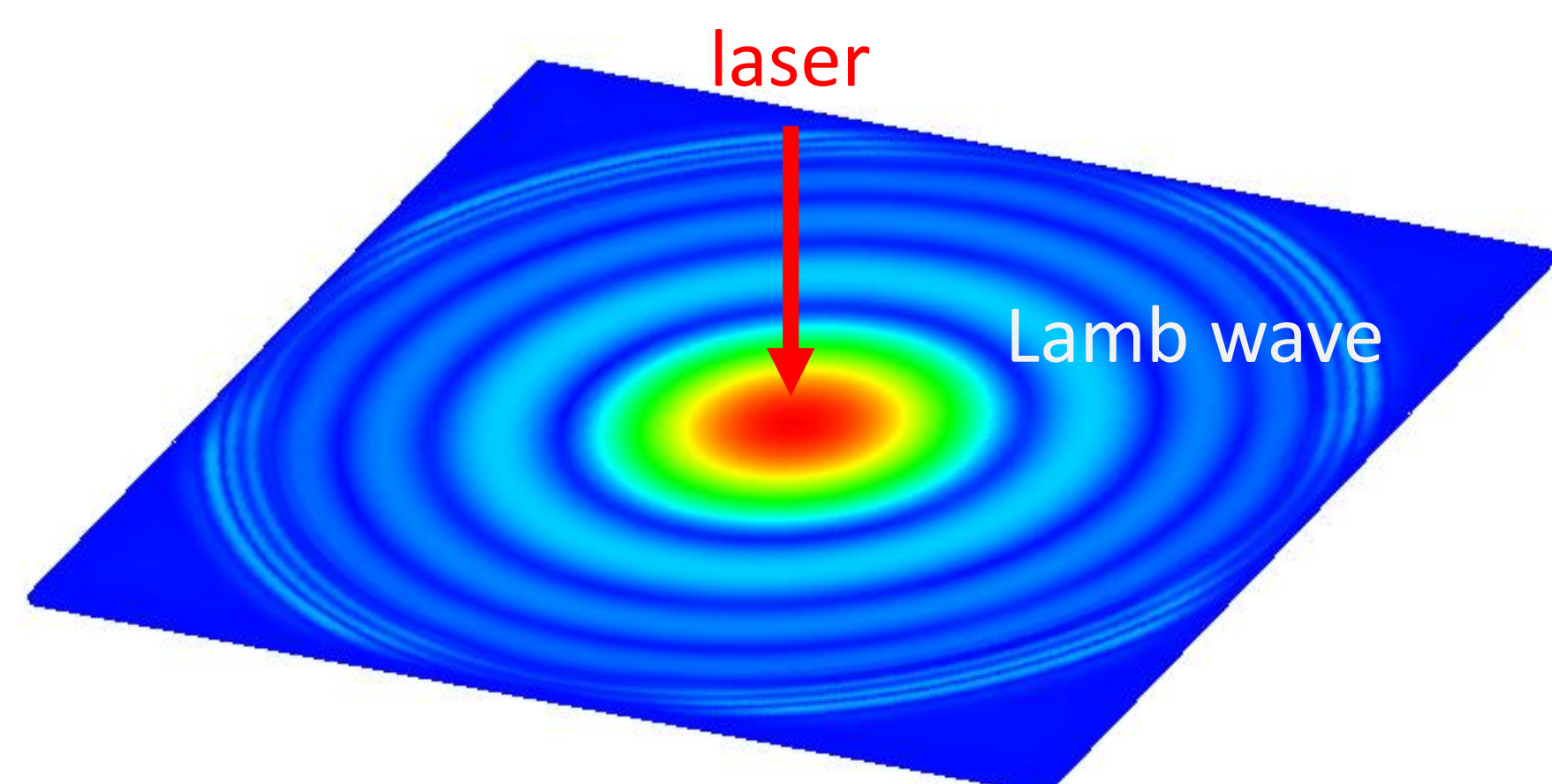
Lightweight composite structures have been applied to airplanes and automobiles. For the health diagnostics of the structures, we are developing structural health monitoring systems with optical-fiber ultrasonic sensors and non-destructive inspection techniques using laser ultrasonics.

Lightweight composite structures



CFRP skin/stringer structural elements

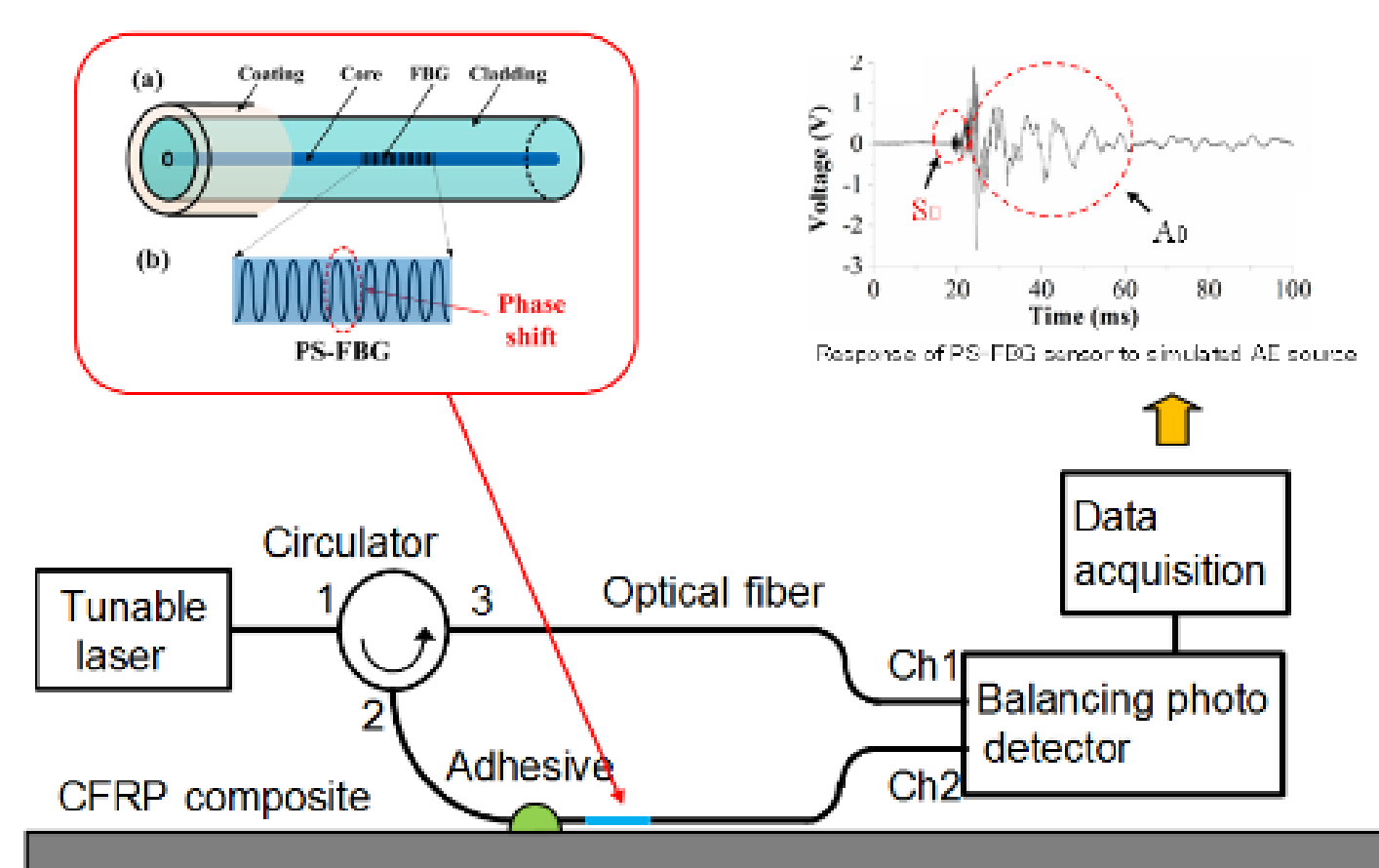
Non-destructive inspection



Numerical simulation of wave propagation behavior in laser ultrasonics

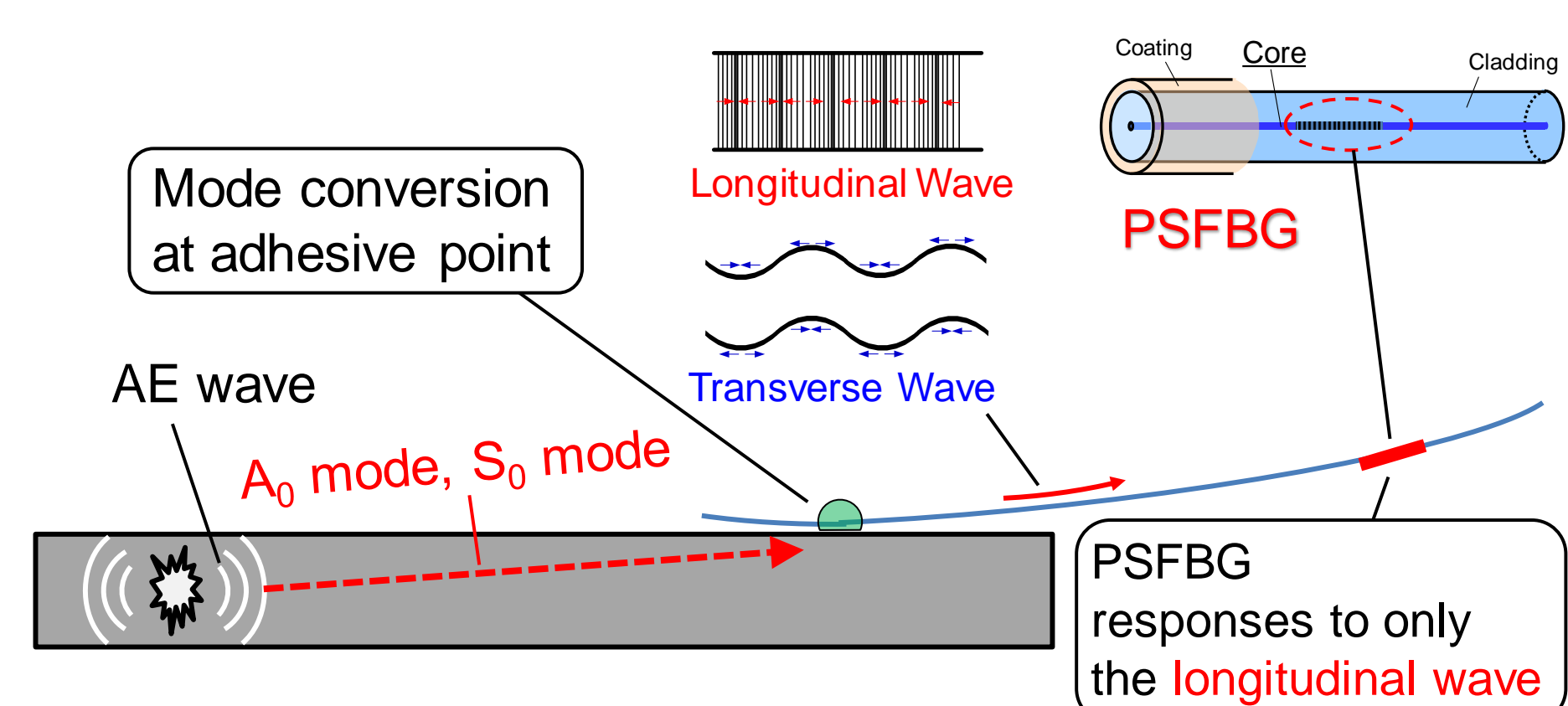
Structural health monitoring

Development of monitoring systems

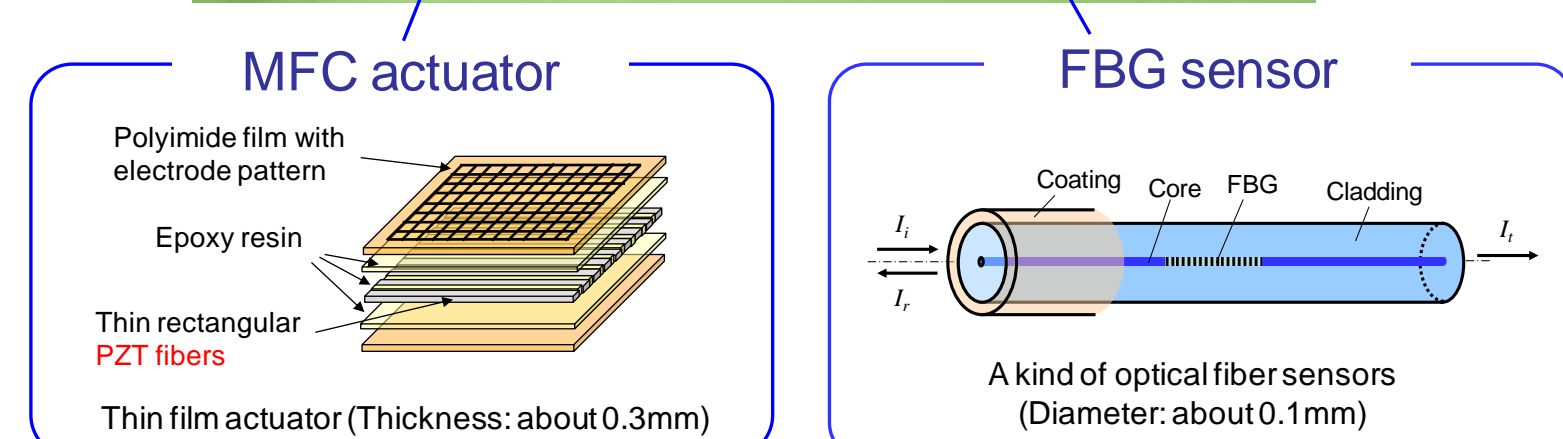
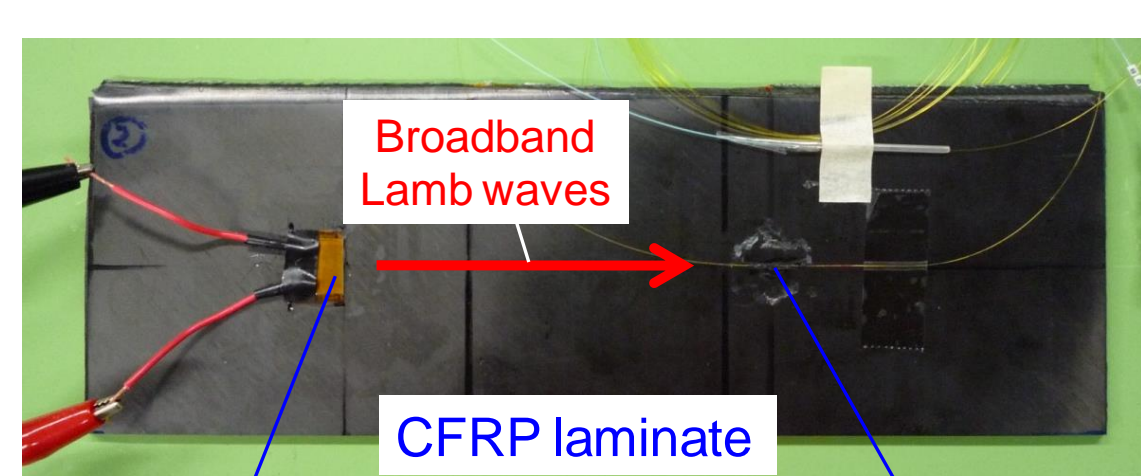


PSFBG high-sensitive fiber-optic ultrasonic sensor system

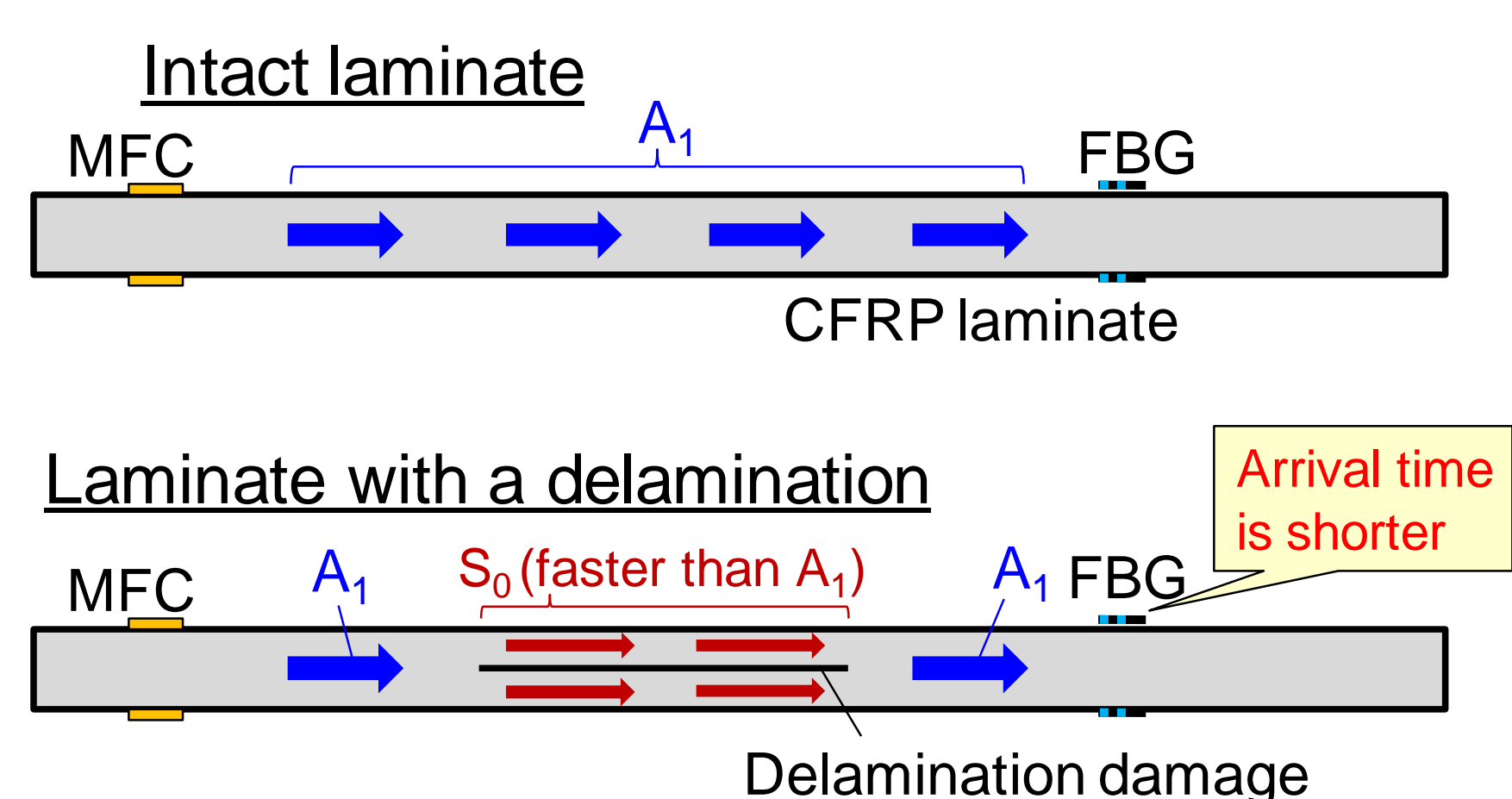
Damage detection methods for composites



Remote sensing method to measure AE waves precisely under ultimate environments



Built-in ultrasonic propagation system using flexible devices



Active detection of delamination damage in a composite plate based on mode conversions of Lamb waves