INTERNATIONAL SEMINAR OF LITETOUCH IN UDX AKIHABARA SUNDAY JULY 9, 2023

SUBTITLE
NEW LASER STERILIZATION MECHANISM

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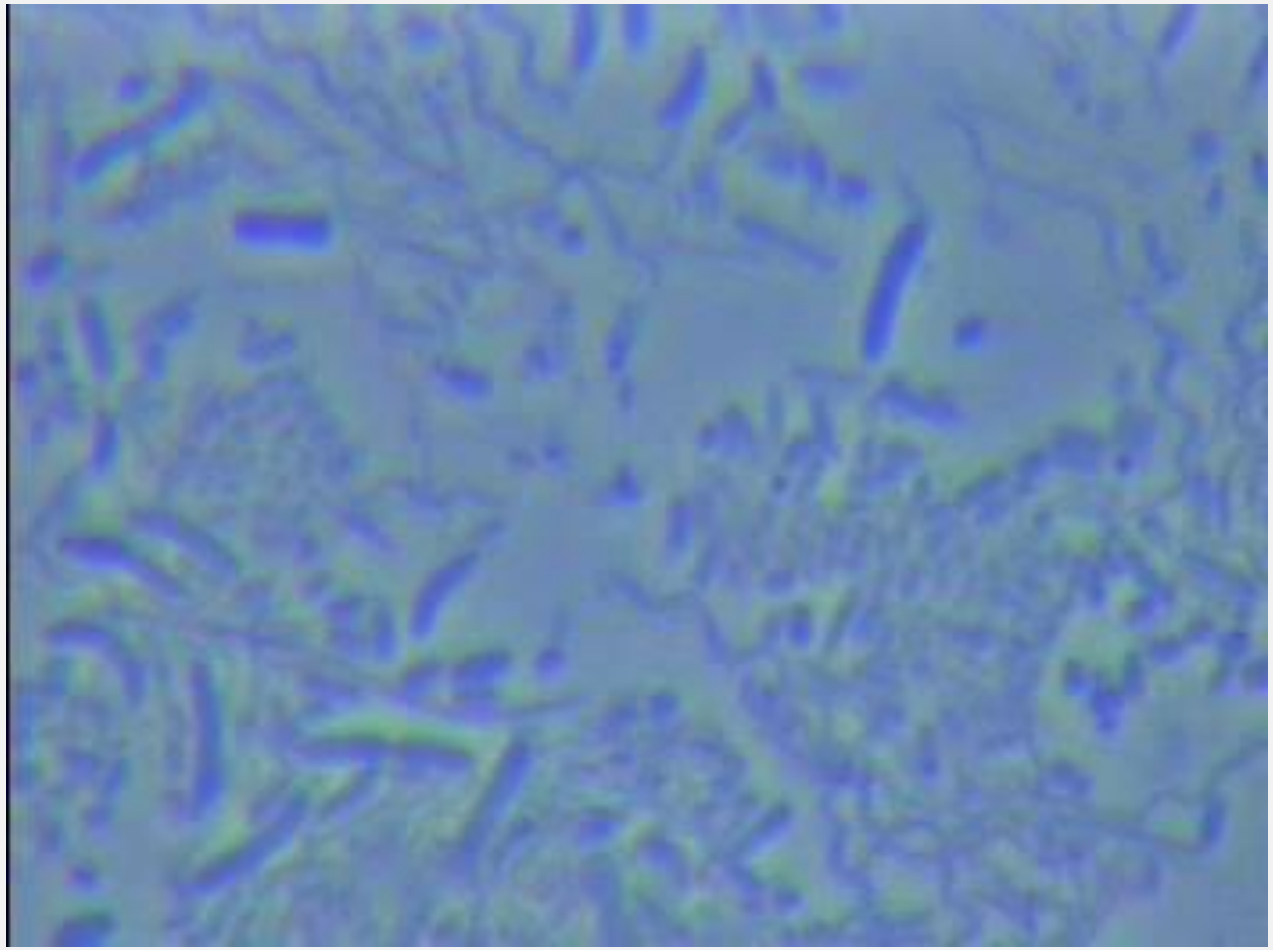
Periodontal pathogens before LiteTouch laser irradiation



After Irradiation of LiteTouch laser

Physically destroyed bacteria

Bacteria that remain morphologically inactive

Video

As a control
After adding hypochlorite water

Video

Bacteria that remain morphologically inactive

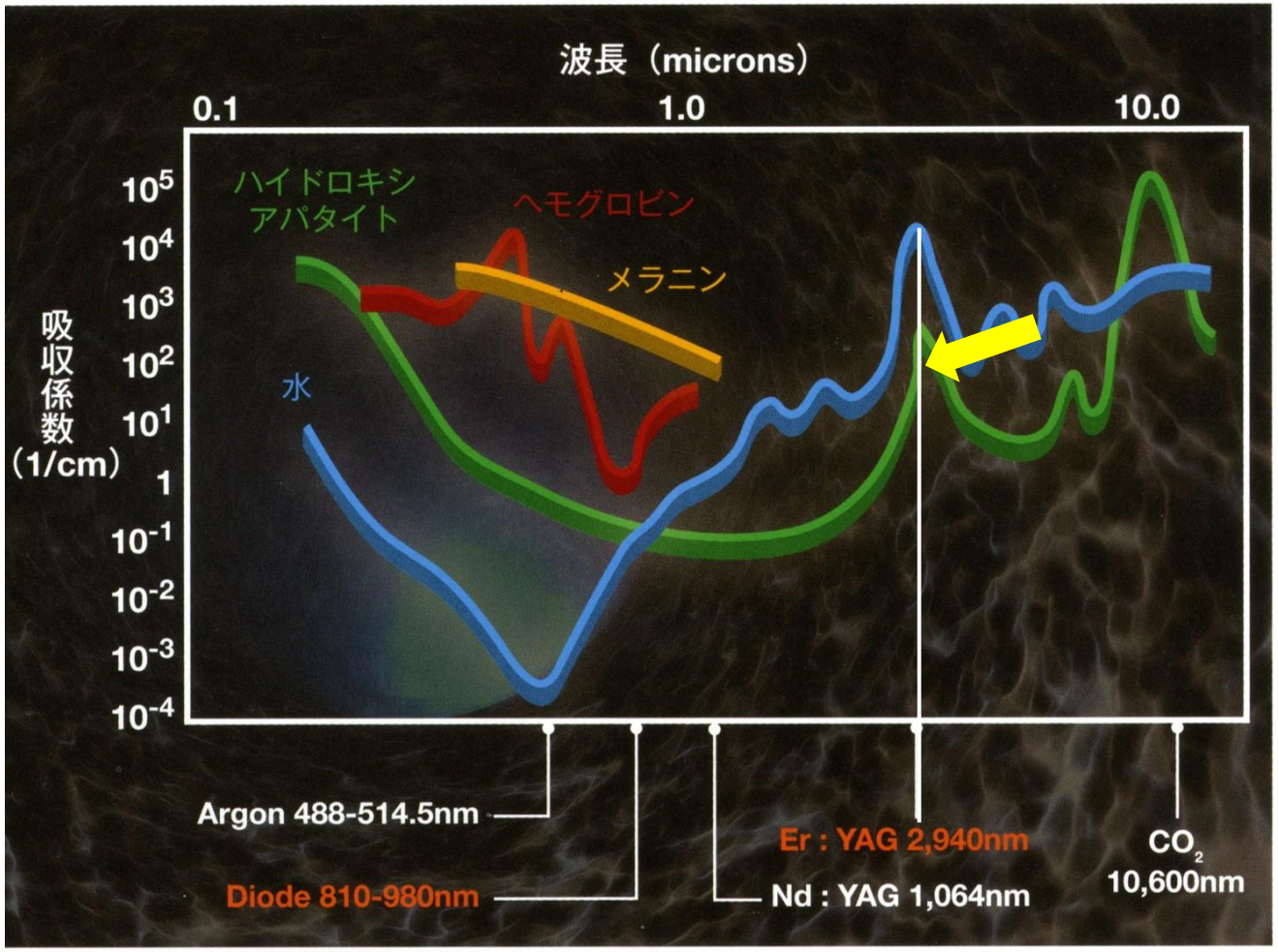
CONSIDERATION

See graph at right.
The Er:YAG laser has the highest water absorption level, but in reality the LiteTouch laser with no-fiber Er:YAG should be even more dominant.

↓

We speculated on the basis of this idea.
As a result, cavitation during water bombardment by the LiteTouch laser is physically destroying the bacteria and simultaneously changing the properties of the water.
Furthermore, we considered the possibility that cavitation produces a substance that inactivates the bacteria.

Absorption curve of laser light



VERIFICATION 1

Purified water [3 ml] in a container with a 3 mm dia. hole in the lid

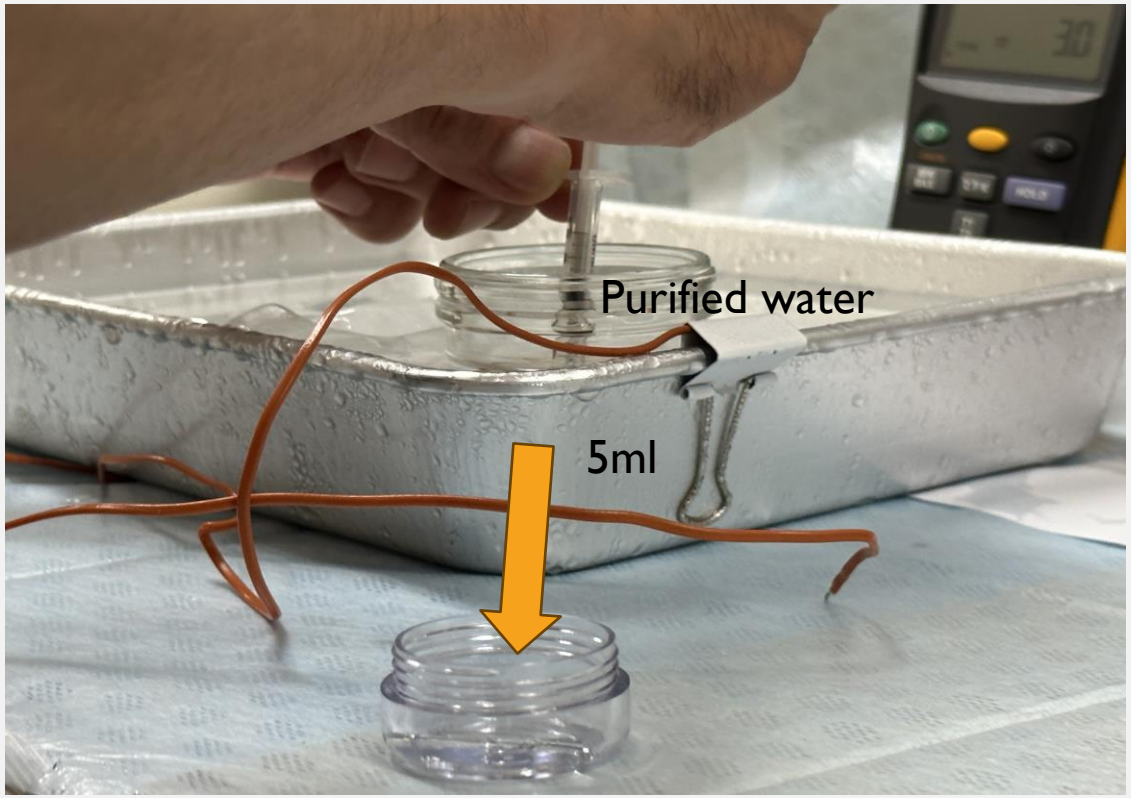
(1) Those not irradiated with LT (control)

(2) LT irradiated for 60 seconds(non control)

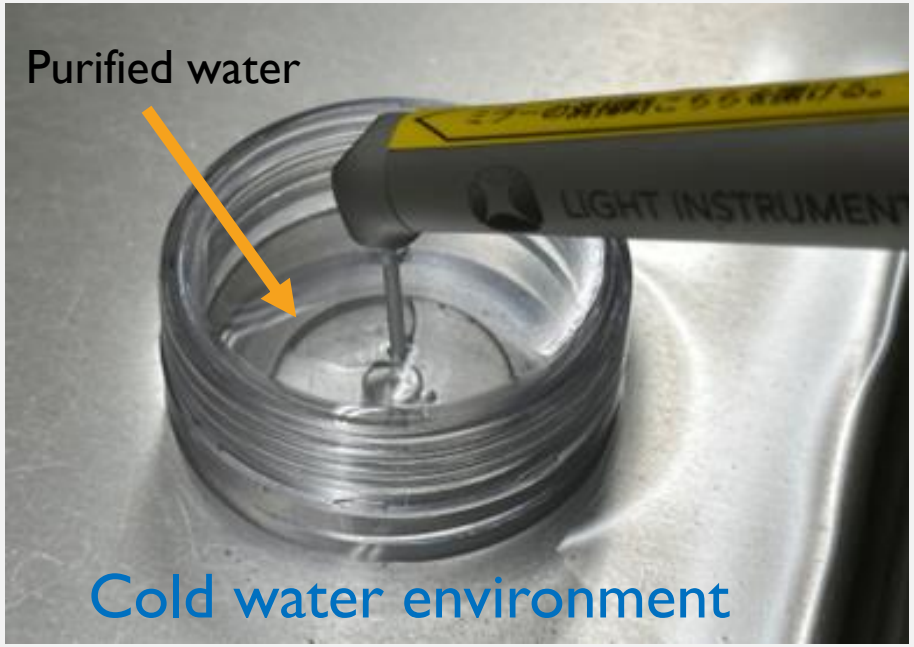
(3) LT irradiated for 120 seconds(non control)

The above were prepared and each was filled with oral bacteria and observed under a phase contrast microscope.

400mJ×20Hz(8w)No air No spray water



ϕ1.3mm,19mm SapphireTip



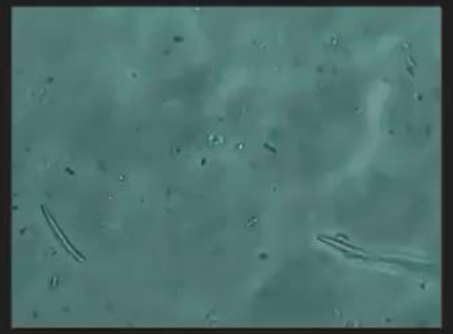
Although complete sterilization was not seen

400mJ×20Hz (8W)

Control

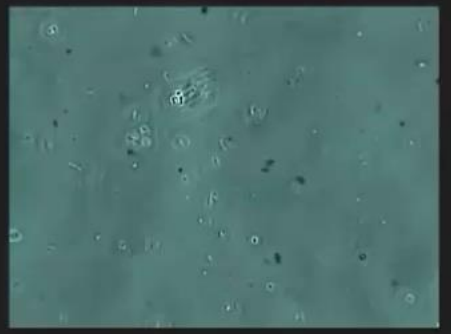
Lively and active.

60 sec



Bacterial activity slowed down a little.

120 sec



Further loss of mobility.

MECHANISM OF LITETOUCH LASER STERILIZATION

- 1) Physical destruction by laser light
- (2) Chemical generation of bactericidal components that occurs in the immediate vicinity of the tip tip

VERIFICATION (2)

The change in water properties was examined with a focus on pH

The following items were used for pH measurements

Colorimetric pH Analyzer

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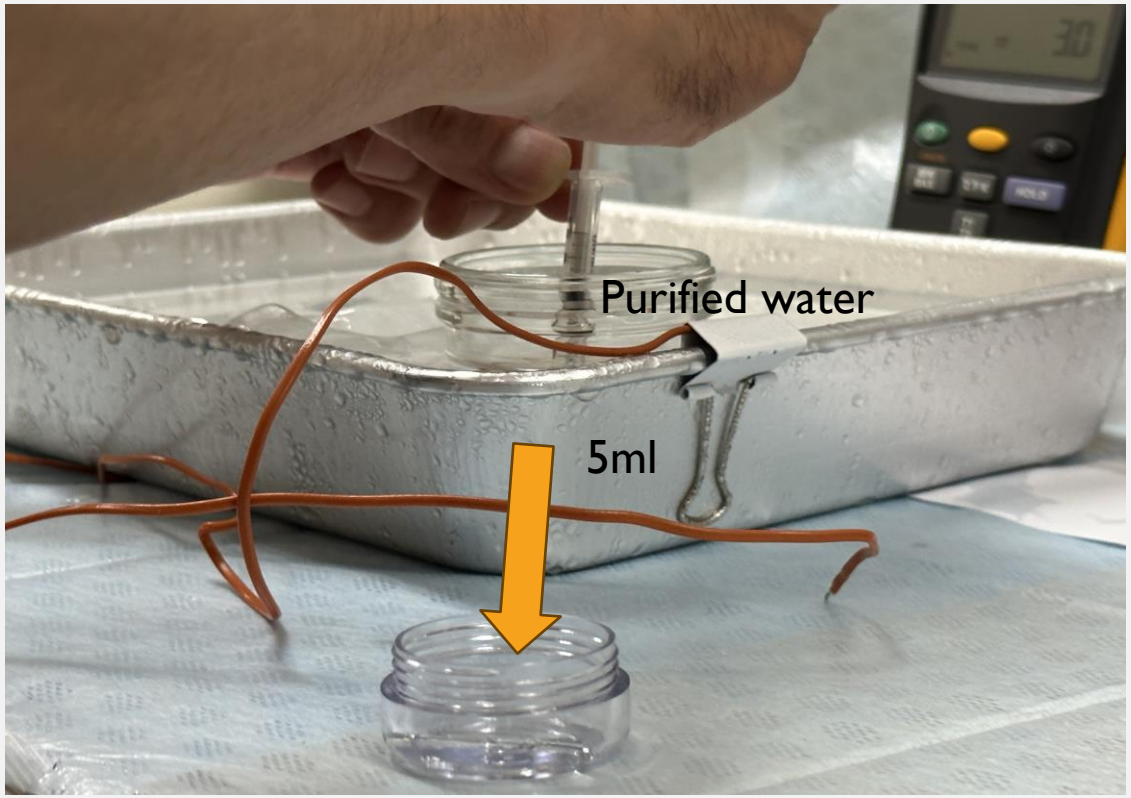
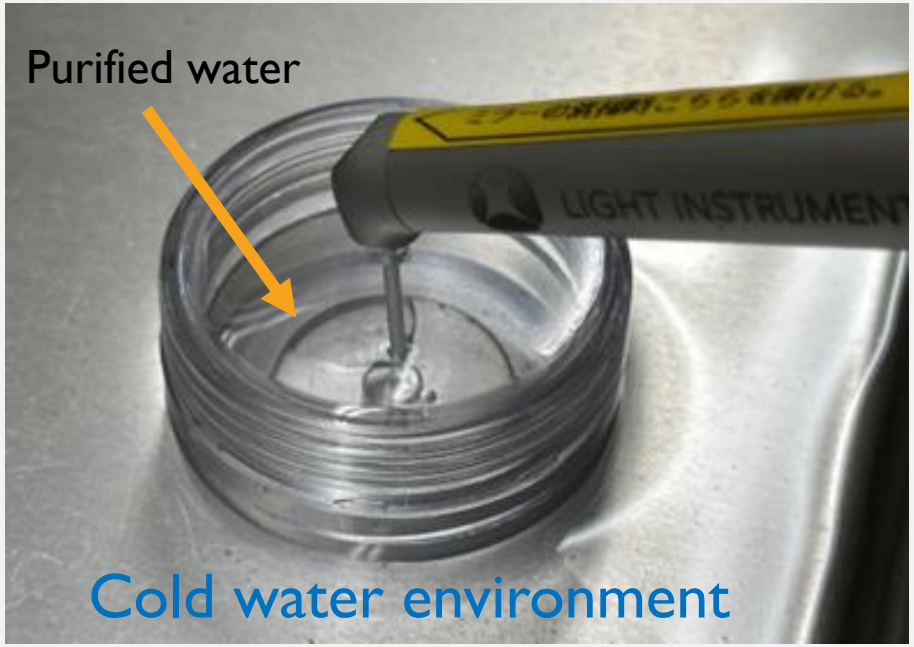
400mJ×20Hz(8w)No air No spray water



ϕ1.3mm,19mm SapphireTip



Sampling purified water

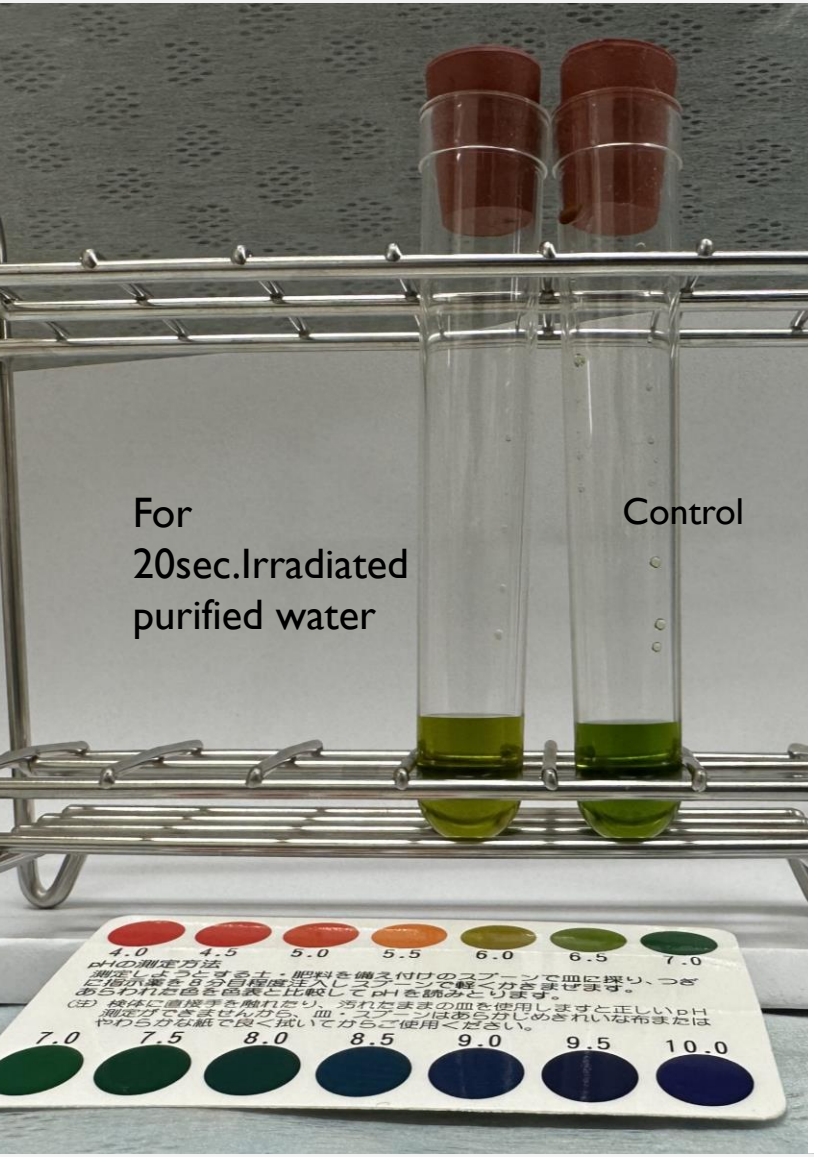
1ml

Two liquids in one

1ml

pH Indicator solution

RESULT



for 60
seconds

Control

Conclusion

1. This experiment showed that when LiteTouch laser is applied to neutral water, the liquid nature changes to acidic.

2. The LiteTouch laser was found to reliably cause a change in the properties of the water.

3. Indeed, this product is thought to have a bactericidal effect.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Please continue to listen to
Professor Shirafuji's presentation
to learn more about what that
product is!