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Unrestricted Light Energy Production by the Undamped Laser Pointer Beam in the Air

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ABSTRACT

The green laser pointer beam (wave length 532 nm, light power 100 milliwatt) produces excited molecules in the atmospheric Air, which radiate at different angles to the laser beam. Interaction of this radiation with foam rubber reactor wall results in avalanche like growth of singlet oxygen molecules concentration and radiation intensity from the slit in the reactor wall. Doubling of the reactor length results in doubling of light energy radiated from the slit. It gives the basis for the assumption: tens kilometers of the reactor length will result in tens kilowatts of light energy radiated from the reactor slit.

Keywords: Laser Pointer Beam; Foam Rubber Reactor; Molecular Singlet Oxygen; Excited Molecules; Photons Multiplication; Avalanche Like Growth; Light Energy Production

Introduction

According to the published data [1], tens kilometers of optical path in atmospheric air are needed to detect considerable absorption of visible light. The green beam of laser pointer itself is not detectable in the open atmospheric air, but any white surface, placed near the beam, becomes illuminated green (Figure 1). The statement can be made about light radiation by any part of the laser beam in direction perpendicular to the beam. In this case the produced light energy is proportional to the optical path length and it can achieve very big value. Experimental proof of the proportionality between the radiated light energy and the optical path length in case of using a tube-like reactor (made of white foam rubber) was the goal of this work.

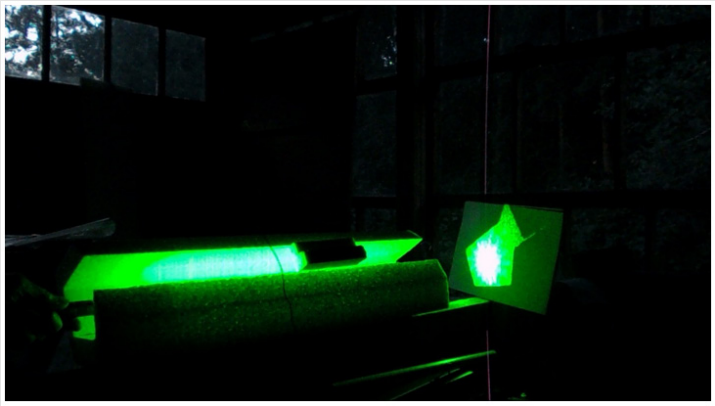

Figure 1: Reactor, assembled of two foam rubber pieces, is illuminated from inside by the laser pointer beam, which does not touch the reactor wall. The white screen is placed to the right from the reactor. The light spot on the screen demonstrates the absence of contacts between laser beam and reactor walls.

Methods of the Experiment

Reactor is assembled (first case) of two corner formed pieces of foam rubber (Figure 2) in so way that a slit in the reactor wall parallel to the reactor longitudinal axis is leaved. In the second case the reactor length was doubled (four peaces of foam rubber were used). Laser pointer with green beam (wave length 532 nm, output power 100 mw) was used for photo initiation of atmospheric air. The laser beam was directed along the reactor in such manner that it did not touch the walls of the reactor (Figure 1). Digital photo camera Nikon Coolpix L25 was used for video registration of reactor, radiation from it and the light spot of the laser beam on the screen (white paper peace). Silicon solar panel FSM 30P was used for measurement of photo signal, produced by light radiation from the reactor slit (Figure 2).

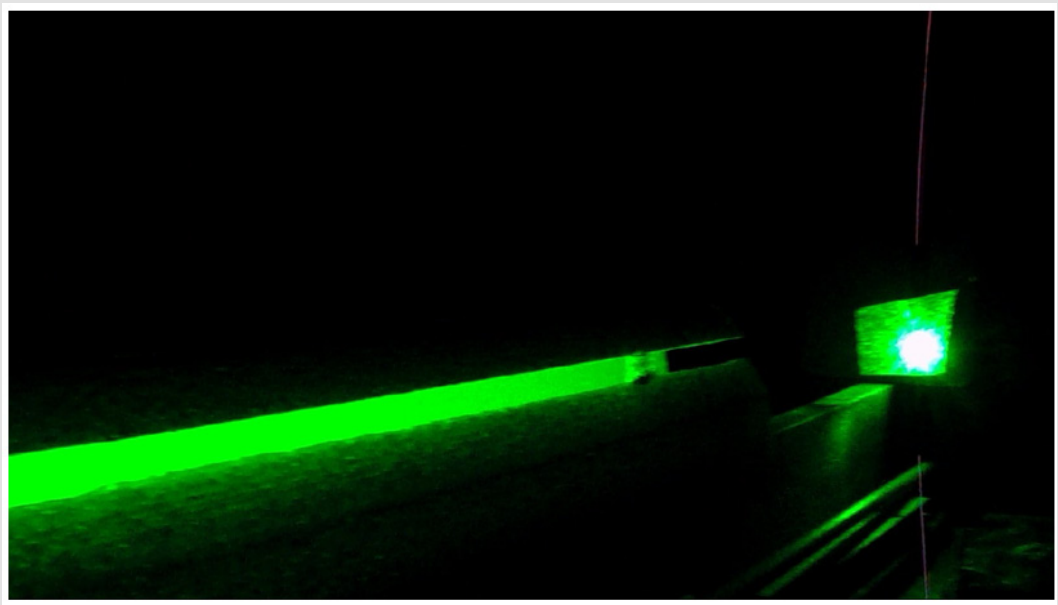

Figure 2: The reactor length is doubled.

Results of the Experiments

Comparison of Figures 1 & 2 demonstrates the absence of detectable difference between the radiation intensity from the reactor slit in two cases of different reactor length. No difference between photo signals measured by solar panel in these two cases was detected. The same about the radiation intensity from the laser beam light spot on the screen. Displacement of solar panel along the reactor does not produce any changes in the photo signal: U≈1V, I≈2A.The flat mirror was placed between the screen and the right end of the reactor. Video registration of reactor slit in course of justification process (laser pointer was moved to achieve the situation, when the laser beam direction is exactly perpendicular to the flat of the mirror surface) showed the jump of the radiation intensity at the moment of coinciding the laser beam direction and the mirror optical axis (Figure 3).

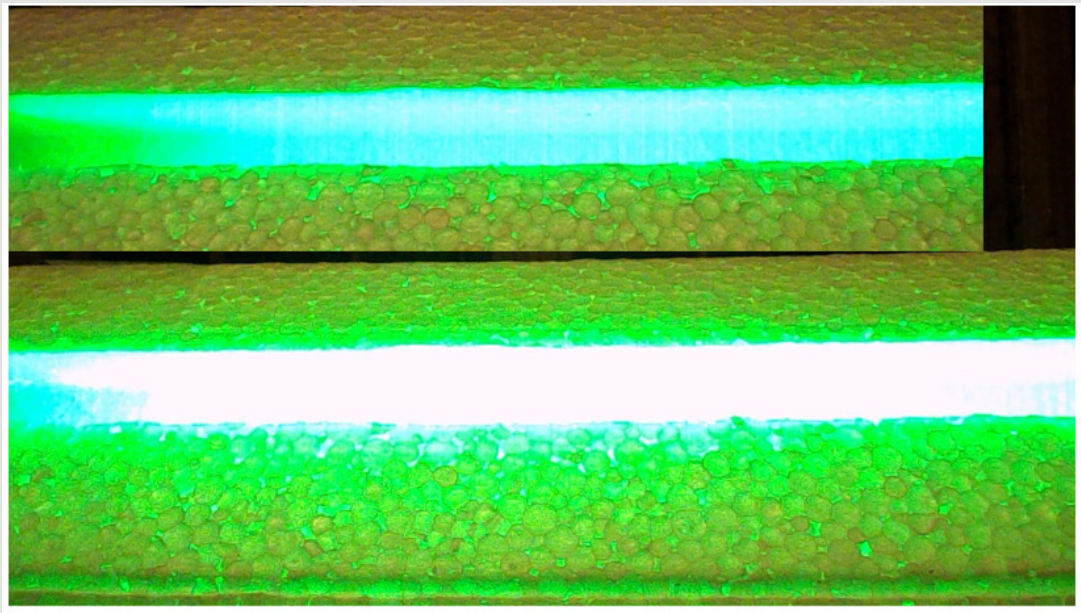

Figure 3: Comparison of radiation intensity from the reactor slit in cases of optical resonance (the lower part of the figure) and its absence (the upper part of the figure). The changing of color from blue to white corresponds with rising of intensity.

Discussion of Results

Figures 1-3 demonstrate the existence of two sorts of radiation from the reactor: in the laser beam direction and perpendicular to it. The last cannot be explained without assumption about excited molecules formation by the laser pointer beam. This is one and the same process in the open air and inside the reactor. But in the open air it does not produce detectable radiation directed perpendicularly to the laser beam. This fact is caused by absorption of photons in contradiction to the conclusion made in [1]. Inside the reactor the interaction of photons with the foam rubber surface produces avalanche like growth of singlet oxygen molecules concentration and the number of photons [2] moving perpendicularly to the laser beam. Excited molecules mentioned above produce although stimulated radiation in the direction of laser beam. Its radiation compensates exactly the absorption of photons causing the absence of detectable beam intensity diminishing. One can assume, that in case of using the reactor tens kilometers long the radiation intensity from every centimeter of the reactor slit will be the same as it was observed in these experiments. So, the total electrical power produced by thousands of solar panels positioned along such reactor will achieve tens of kilowatts.

References

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