OBJECTIVES, ACTIVITIES, ACHIEVEMENT DEGREE

2007

Objective no. 1: Building the high voltage pulse generator which feeds the atmospheric pressure cold plasmas discharge device.

Activities (achievement degree):

1.1. Building the experimental model (100 %).

1.2. Performances determination of the experimental model (100 %).

1.3. Utility demonstration of the experimental model in order to obtain pulsed cold atmospheric plasma jets (100 %).

2008

Objective no. 2: Conceiving various geometric structures to generate pulsed atmospheric pressure cold plasmas jets.

Activities (achievement degree):

2.1. Building various geometrical structures: point-plate, point-point, plate-plate, wire-plate, with/without dielectric barrier (100 %).

2.2. The choice of the best geometries for pulsed cold plasma jets emission (100%).

2.3. Working out the web page (100 %).

Objective no. 3: Working out ways of chemical activation of the pulsed atmospheric pressure cold plasmas.

Activities (achievement degree):

3.1. Working out systems to introduce chemical active substances in the inert gas flow (100 %).

3.2. The study of the chemical active substances on the pulsed cold plasma jets (100 %).

2009

Objective no. 4: Physical and chemical characterization of the pulsed cold plasma jets.

Activities (achievement degree):

4.1. Electrical, spectral and thermal characteristics (100 %).

4.2. Chemical composition determination (100 %).

Objective no. 5: Study of the effects of the pulsed atmospheric pressure cold plasmas on living cells.

Activities (achievement degree):

5.1. Determination of the effects for various types of cells, both normal and tumoral (100 %).

5.2. The emphasizing of the specificity of the plasma jets effects, regarding the types of treated cells (100 %).

2010

Objective no. 6: Optimization of the parameters for the atmospheric pressure cold plasma jets to maximize the apoptotic effect on living cells.

Activities (achievement degree):

6.1. The determination of the experimental conditions to obtain minimal necrotic effects at a given percent of apoptotic ones (100 %).

Objective no. 7: Conclusions regarding possible applications of the pulsed atmospheric pressure cold plasma jets device.

Activities (achievement degree):

7.1. Synthesis of the obtained performances (100 %).

7.2. Establishment of the possibility to match the obtained performances with various application fields (100 %).

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