# Millikan Oil Drop Lab Activity Answers

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#### Millikan Oil Drop Lab Activity

Millikan oil-drop experiment Between 1909 and 1910 the American physicist Robert Millikan conducted a series of oil-drop experiments. By comparing applied electric force with changes in the motion of the oil drops, he was able to determine the electric charge on each drop.

Millikan oil-drop experiment | Date, Summary, & Results ...

Robert Millikan's oil drop experiment measured the charge of the electron. The experiment was performed by spraying a mist of oil droplets into a chamber above the metal plates. The choice of oil was important because most oils would evaporate under the heat of the light source, causing the drop to change mass throughout the experiment.

#### The Millikan Oil Drop Chemistry Experiment

The Oil Drop Experiment In 1909, Robert Millikan and Harvey Fletcher conducted the oil drop experiment to determine the charge of an electron. They suspended tiny charged droplets of oil between two metal electrodes by balancing downward gravitational force with upward drag and electric forces.

#### Millikan's Oil Drop Experiment | Introduction to Chemistry

Millikan Oil Drop Lab. In this lab you will be looking for oil drops that can caught in the electric field between two capacitor plates. Some drops will fall out of your field of view as the gravitational force on them is larger than the electric force. Other drops will rise out of your field of view as the gravitational force is too small for ...

#### Millikan Oil Drop Lab - The Physics Aviary

Oil-drop experiment was the first direct and compelling measurement of the electric charge of a single electron. It was performed originally in 1909 by the American physicist Robert A. Millikan.

### Millikan's oil drop experiment (Self Evaluation): Modern ...

Millikan's Apparatus Millikan's experiment is based around observing charged oil droplets in free fall and in the presence of an electric field. A fine mist of oil is sprayed across the top of a perspex cylinder with a small 'chimney' that leads down to the cell (if the cell valve is open).

#### Millikan's Oil Drop Experiment: How to Determine the ...

Overview: In this activity the students are to find the mass of the object that is common to a set of envelopes. This activity is analogous to the Millikan oil drop experiment. The Millikan Experiment and the Standard Model both require that students recognize that charge and matter are observed in discrete units.

#### The Millikan Experiment 32

Millikan oil drop activity . You will need: \* 17 plastic film containers, yogurt cups, plastic eggs, or other similar containers to simulate oil drops. \* About 200 like objects, such as pre-1983 pennies (3.2 g), or post-1983 pennies (2.5 g) that the teacher will place in the containers to simulate electrons. \* Lab balance.

#### "Modeling the Millikan Oil Drop Experiment" - The Science ...

Millikan determines the value of charge on an electron using oil drop method discussed below. This method was based upon the measurement of. The terminal velocity of an oil drop under the influence of gravity alone. The terminal velocity under the joint action of gravity and an electric field opposing the gravity.

#### Notes on Millikan's Oil Drop Experiment | Grade 12 ...

Oil drop experiment was performed originally by the American physicist Robert A. Millikan in 1909. It measures the size of charge on a single electron. Apparatus consist of an atomizer, which helps to spray tiny droplets. By means of a short focal distance telescope, the droplets can be viewed.

#### Millikan's oil drop experiment (Theory): Modern Physics ...

Your experiment will be based on the one conducted by Robert Millikan starting in 1908. You will spray oil drops into the electric field of a capacitor and try to find the charge that the drops...

#### Millikan Oil Drop Lab - Google Sites

Robert Millikan and the Oil Drop Experiment Physics 401 4 ROBERT ANDREWS MILLIKAN 1868-1953 University of Chicago The Nobel Prize in Physics 1923. Robert A. Millikan "for his work on the elementary charge of electricity and on the photoelectric effect". Moved to Caltech in 1921.

#### Millikan Oil Drop Experiment - Course Websites

The Millikan Oil-Drop experiment is an important experiment in the history of physics. The American physicist Robert A. Millikan used it to produce an accurate measurement of the charge on the electron. In Millikan's apparatus a low-level radioactive source, an alpha emitter, was used to change the amount of charge on the oil droplets.

#### Millikan Oil Drop: Pre-lab Assignment

After viewing Millikan's work with the oil drop experiment, naysayers could no longer doubt the existence of the electron and its status as a particle. Millikan determined the charge of the electron to be  $4.77 \pm 0.009 \times 10 - 10$  electrostatic units (1.592×10 -19 coulombs).

#### Robert A. Millikan and the Oil Drop Experiment: The ...

Robert Millikan was awarded the Nobel Prize in physics in 1923 for this brilliant experiment. A simplistic schematic of his apparatus is shown below. A spherical drop of oil, falling through a viscous medium like air, will quickly reach a constant velocity.

#### Millikan Oil Drop - De Anza College

INSTRUCTIONAL OBJECTIVES (Stated): Students will be able to describe the principles involved in the Millikan Oil Drop Experiment, and given the necessary experimental data, students will determine the charge on a single electron. INSTRUCTIONAL PREREQUISITES: (Inferred): Instruction

in concepts underlying the measurement of an electron's charge.

#### ERIC - ed232642 - Millikan. MicroSIFT Courseware ...

The oil drop experiment was performed by Robert A. Millikan and Harvey Fletcher in 1909 to measure the elementary electric charge (the charge of the electron). The experiment took place in the Ryerson Physical Laboratory at the University of Chicago. Millikan received the Nobel Prize in Physics in 1923.

#### Oil drop experiment - Wikipedia

Question: In Millikan's Experiment, An Oil Drop Of Radius 1.89  $\mu$ m And Density 0.860 G/cm³ Is Suspended In Chamber C (see The Figure) When A Downward Electric Field Of 2.48  $\times$  105 N/C Is Applied. Find The Charge On The Drop, In Terms Of E. Number Enter Your Answer In Accordance To The Question Statement Units Choose The Answer From The Menu In Accordance To The ...

#### In Millikan's Experiment, An Oil Drop Of Radius 1 ...

e: 82.7 Resources Hint CH A scientist repeats the Millikan oil drop experiment in a different galaxy and the charge on the drops is measured in a unit called the electrino (el). The scientist obtains data for four drops.

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