Answer on question #56739, Physics / Electromagnetism

Question 64 equal drops of same size are charged at potential of 220 volt and colapsed to form a biger drop , calculate the potential of biger drop?

Solution Here we have to remember the fact that capacity of the spherical drop is proportional to its radius. So, before collapse we had capacitance proportional to $64r$ where r is radius of small drops. Radius of bigger drop is 4r. So, capacitance decreased is 4 times, while charge remains the same. This means, the potential will increase in 4 times and will be 880 V.