

Re-examination of capillary phenomena with gravity as a variable : Second report

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1. Otemae Senior High School of Osaka prefecture : the evening course

Surface tension acts on the liquid to reduce its surface area. In a thin tube, the phenomenon that the liquid surface rises due to surface tension is well known as capillary phenomenon. According to theory, the height of this liquid level is inversely proportional to the radius of the tube and gravity. Experiments with varying tube radius have been made up to now, and it has been confirmed that the relationship between liquid level and tube radius follows a theoretical formula. We have an apparatus to change gravity. Therefore, we tried to confirm experimentally whether the relationship between gravity and the height of the liquid level also follows the theoretical formula. When water was used as the liquid sample, the height of the liquid level did not follow the theoretical formula, and the rise stopped at a certain gravity value. However, in the case of ethanol, the liquid level increased according to the theoretical formula. Based on this experimental result, we discuss the theoretical formula and the experimental method.

Keywords: Capillary phenomenon, gravity, Gravity variable apparatus