Cooling Rack for Keeping Microtubes in Laboratories

[a]Rojina Nikfarman Motlagh, [b]Mina Ghiasi
* Corresponding Authors: [a]nikfarmanr@gmail.com,[b]m.minaghiasi@gmail.com
School: Farzanegan 1
Supervisor: Hassan Vahidi Emami

This research is making a suitable equipment to produce appropriate temperature in keeping microtubes in laboratories and doing different tests without using dry ice or other substances that can cause temperature fluctuations.Rack is a metallic or plastic equipment in different sizes has been used to keep microtubes and test tubes.

Coffee Cup

Elahe Ahmadi
School: Farzanegan 2 , 2015
Brain and Cognitive science ,
Massachusetts Institute of Technology (MIT) , 2016-2020
Full Paper : IYPT Magazine, June 2016, Vol.4
Research : PYPT 2015

Abstract

We drink at least four times a day. However, if we fill a glass with a liquid such as coffee or water, and start to walk, it may start splashing. Our purpose is to find a theoretical model for this phenomenon. So we can analyze the problem and find a way to prevent liquid from splashing. First step is to simplify the problem. In order to do that, we will make some assumption for human walking and liquid in the glass, then, based on each of them, we will suggest three different models. After that by calculation we will find out the liquid behavior. At the end, we will design a glass that minimizes the chance of liquid splashing.

Experiment

Models for human walking

following sentences describe the first suggested model. We assume the person in our problem walks between two points like a block, and the glass is attached to the block. the simplest v-t graph (velocity relative to time) for a block to move from one point to another-with initial velocity equal to zero- is shown in the chart 1. First, the block increases its velocity with a constant acceleration. Then it may keep on moving with a constant velocity for a while.

Chart 1- v-t graph for our first model