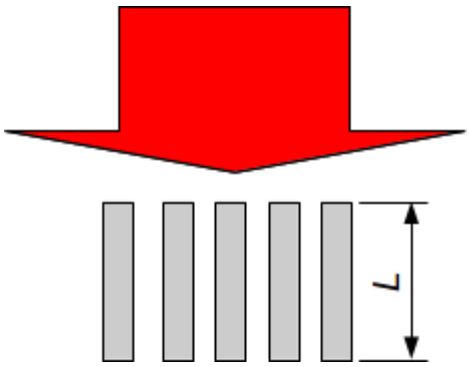
S STUDENTS

National Student Team Contest (first stage)
Task 7. Heating nanowires



1. Laser-induced effects are important in the study of nanostructures. Estimate the maximum temperature to which the isolated germanium nanowires can be heated during τ = 10 s. The length of the nanowires L = 100 nm, the laser intensity I = 3000 W / cm^2. The wavelength of incident radiation is λ = 630 nm. Heat exchange with the environment during the time of radiation should be neglected. Take into account the absorption coefficient. Find the necessary data yourself. **(4 points)**

2. Make the same estimate for silicon nanowires of the same size. **(2 points)**

Total – 6 points