## Answer on question #54320, Physics / Other

**Question** Calculate the change in internal energy of 2kg of water at 90 degree celcius when it is changed to  $3.30m^3$  of steam at 100°C. The whole process occurs at atmospheric pressure. The latent heat of vaporization of water is  $2.26 \times 10^6$  J/kg.

**Solution** Change of internal energy is equal to heat needed for heating and vaporization:

 $\Delta U = Q_h + Q_v = cm\Delta t + Cm = 4200 \cdot 2 \cdot 10 + 2.26 \cdot 10^6 \cdot 2 = 4.604 \cdot 10^6 J$