

Fig.6. Temporal variation of droplet area with initial diameter of n-heptane at different temperature

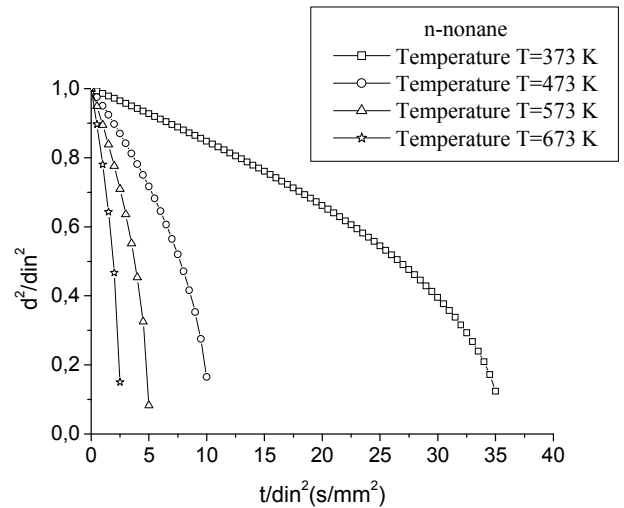


Fig.8. Temporal variation of droplet area with initial diameter of n-nonane at different temperature

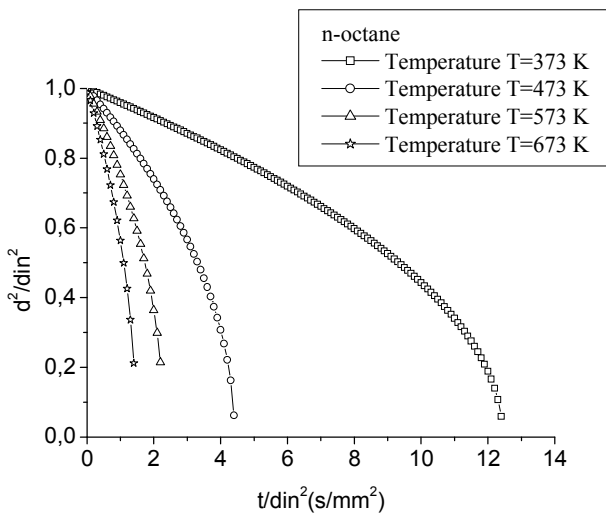


Fig.7. Temporal variation of droplet area with initial diameter of n-octane at different temperature

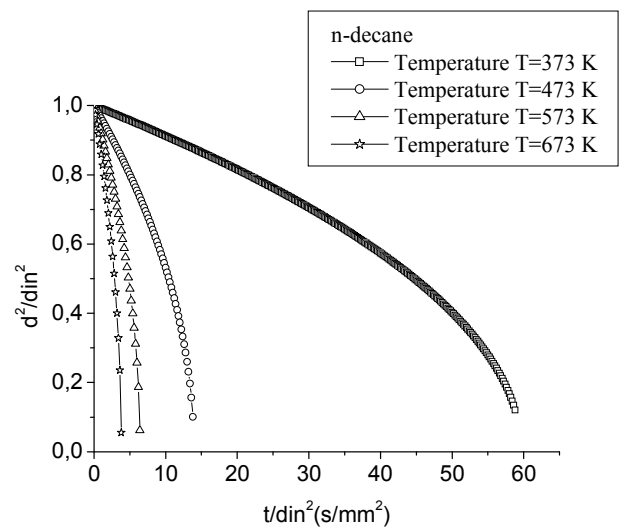


Fig.9. Temporal variation of droplet area with initial diameter of n-decane at different temperature

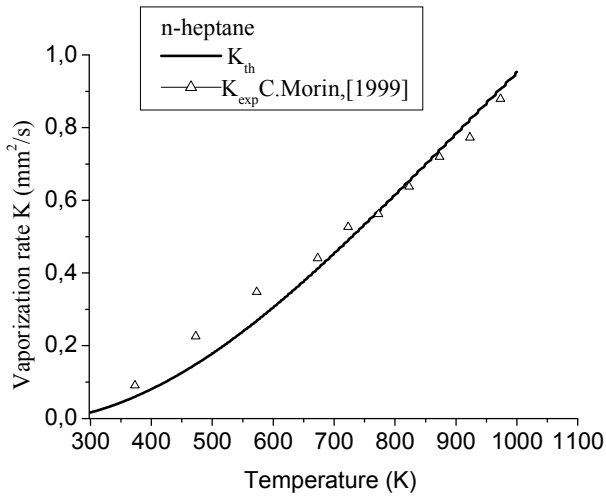


Fig.10. Evolution of average vaporisation rate for n-heptane versus temperature

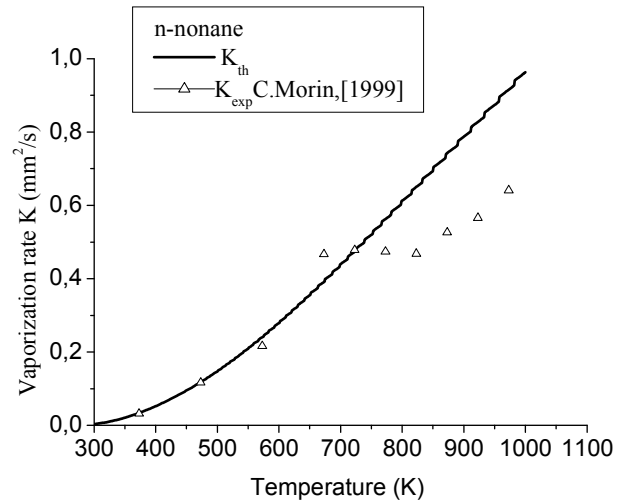


Fig.12. Evolution of average vaporisation rate for n-nonane versus temperature

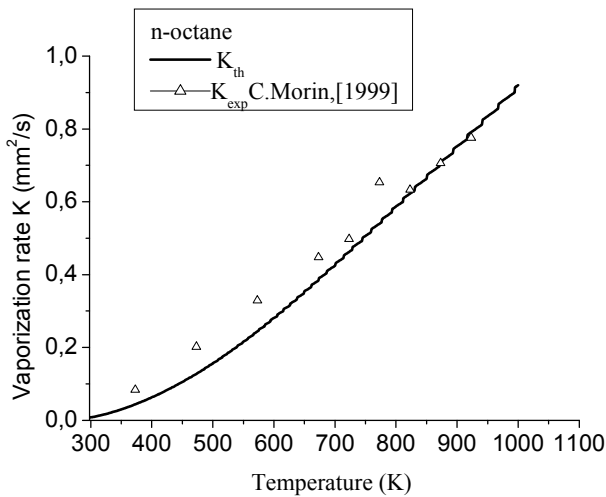


Fig.11. Evolution of average vaporisation rate for n-octane versus temperature

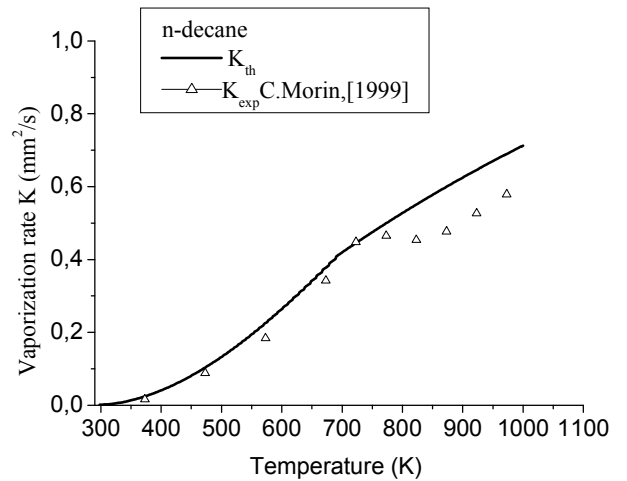


Fig.13. Evolution of average vaporisation rate for n-decane versus temperature

Conclusion

The study we presented aims to identify and characterize the effect of temperature on the fuels droplets vaporisation. The results obtained by the quasi-steady theory are confronted with several test cases, including those obtained by M.Birouk, I.Gokalp, 1996 and C.Morin, I.Gokalp, 1999 under normal conditions pressure and temperature, then at different temperatures. was observed for the normal case the fuel that has a molar mass lower vaporizes rapidly, while the fuel has a higher molecular weight has a surface temperature lower and therefore the rate of evaporation very low. In if stagnant, with variation of temperature, the vaporisation rate is proportional to it, the more the temperature rises more fuel becomes more volatile.

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