

Figure 8: Temperature distribution of the heat pipe at 62 °C

The above figure shows temperature distribution along the heat pipe with max stress value of 5995 at 62°C.

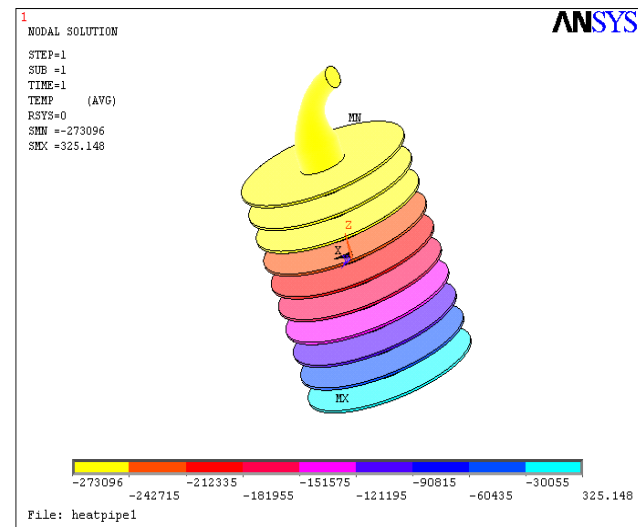


Figure 9: Thermal Flux of the heat pipe at 62 °C

The above figure shows thermal flux along the heat pipe with maximum value of 325.148 at 62°C.

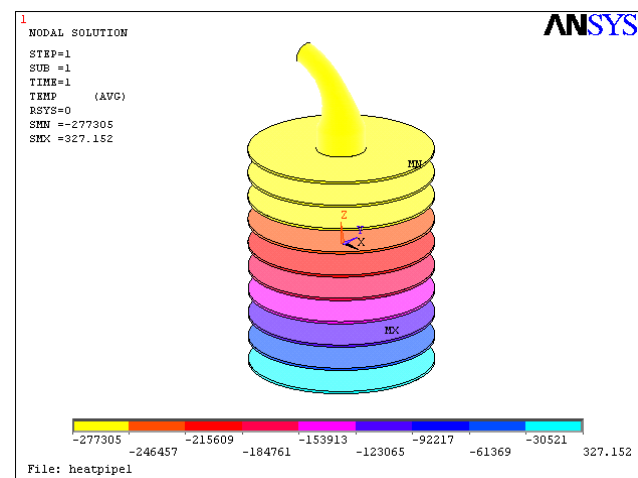


Figure 10: Temp distribution of the heat pipe at 64 °C

The above figure shows temperature distribution along the heat pipe with max stress value of 327.152 at 64°C.

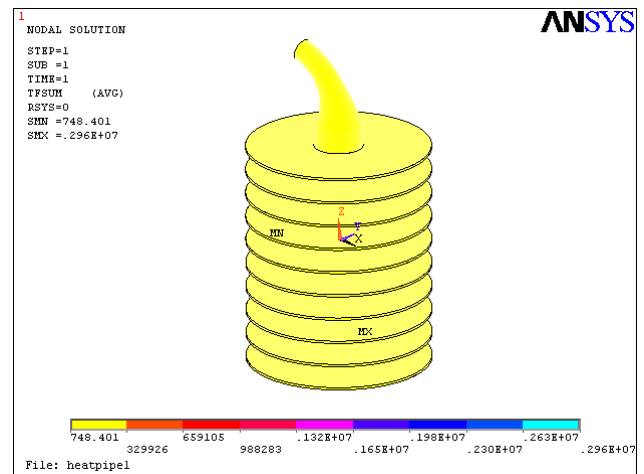


Figure 11: Thermal Flux of the heat pipe at 64 °C

The above figure shows thermal flux along the heat pipe with maximum value of 743.401 at 64°C

Fig No. 6.7 Thermal Gradient of the heat pipe at 64 °C

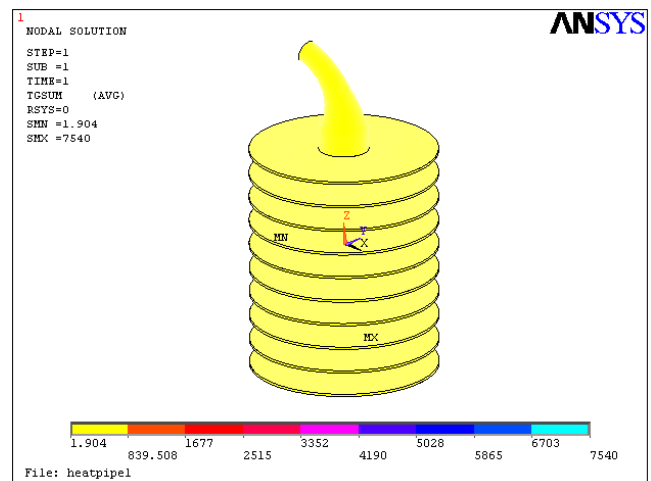


Figure 11: Thermal Gradient of the heat pipe at 64 °C

The above figure shows thermal gradient along the heat pipe with maximum value of 7540 at 64°C

5. Conclusion

The fabrication of heat pipe has been carried out and experiments were done comparing with heat pipe and heat sink of the computer processing unit (CPU). The temperature without using heat pipe is reduced from 64°C to 46°C and by introducing heat it is reduced further to 36°C. The obtained values are tabulated in the tables. As a result, overall heat transfer rate was calculated. Experimental calculations are also done and results are represented in graphs. As a result of the tests, maximum heat transfer rate and reliability of the heat pipe developed were obtained and it was indicated that the heat pipe can be applied to electronic equipment cooling.

When used properly, heat pipes can do wonders. However, they are certainly not the ultimate solution to all cooling related problems. Due to the number of factors to consider when applying heat pipes, our advice is: Use ready-made heat pipe-based coolers only if you are absolutely sure that they are suitable for your particular cooling problem. Do not try to build your own heat pipe-based cooling system, unless you really know what you are doing.

References

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Author Profile



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