

## References

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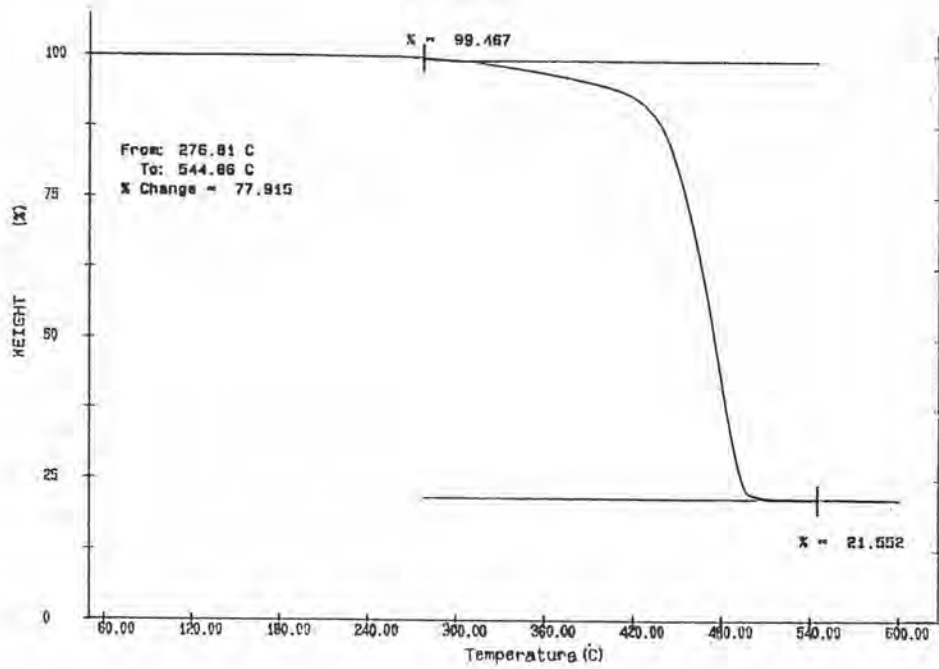
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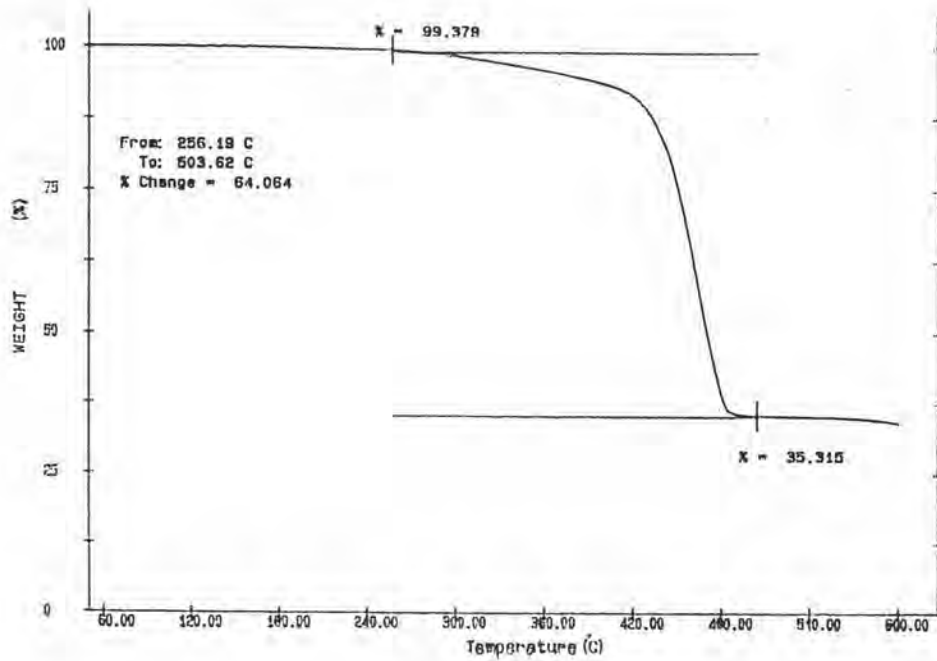
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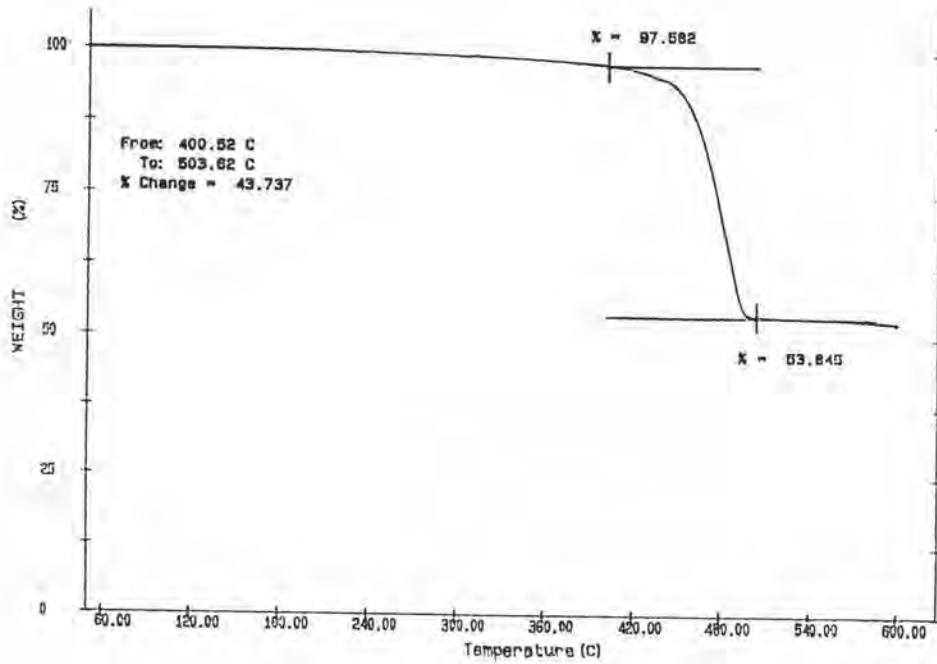
## Appendix



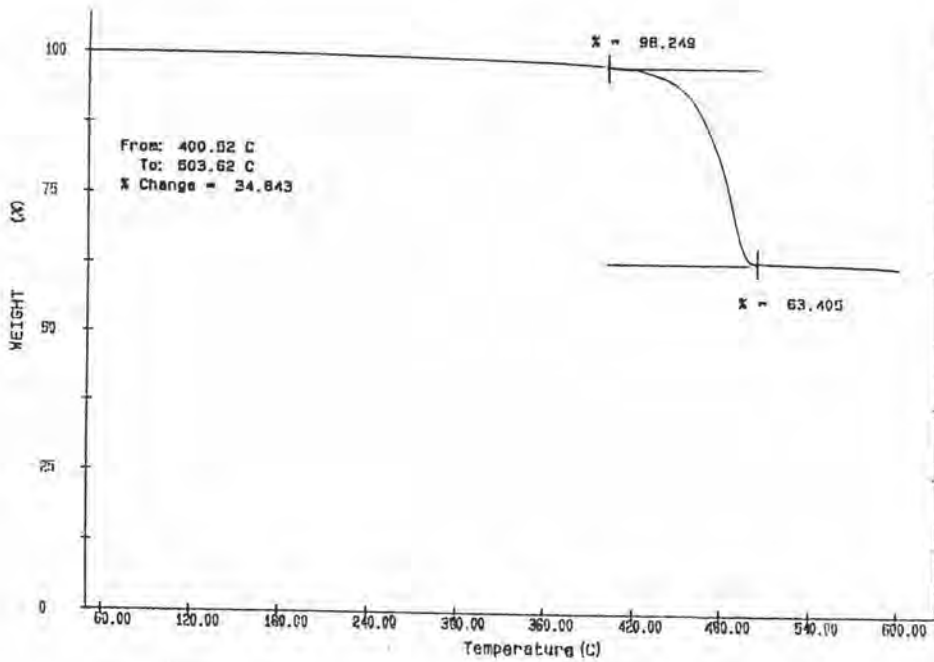
TGA curve of 0.1 volume fraction  $\text{CaCO}_3$  filled HDPE composite.



TGA curve of 0.2 volume fraction  $\text{CaCO}_3$  filled HDPE composite.

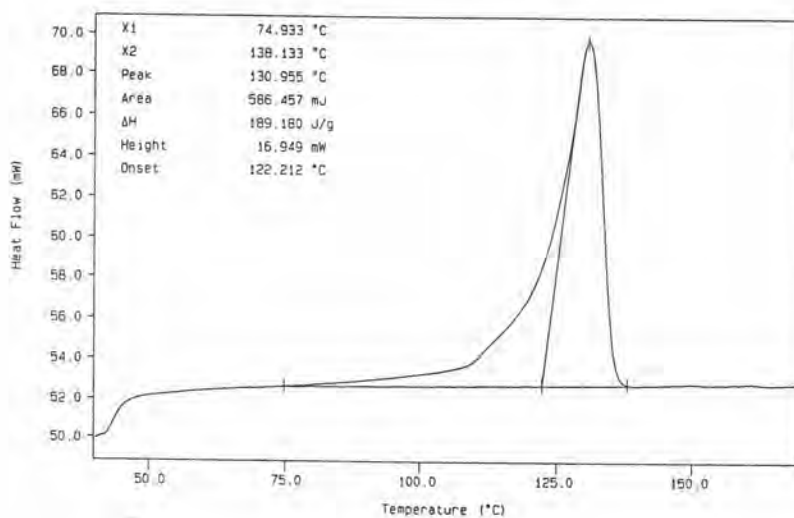


TGA curve of 0.3 volume fraction  $\text{CaCO}_3$  filled HDPE composite.

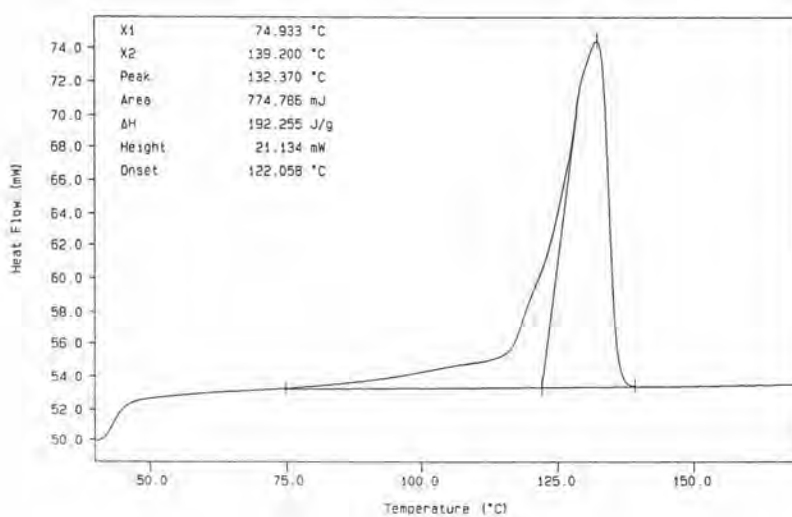


TGA curve of 0.4 volume fraction  $\text{CaCO}_3$  filled HDPE composite.

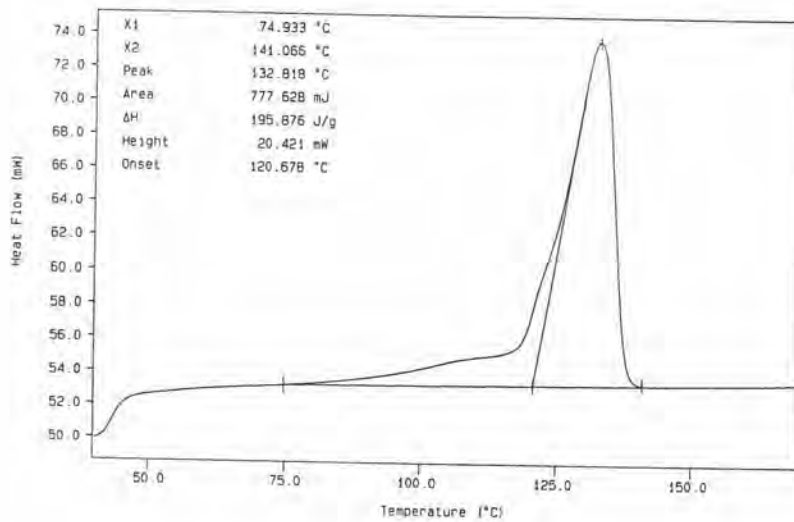




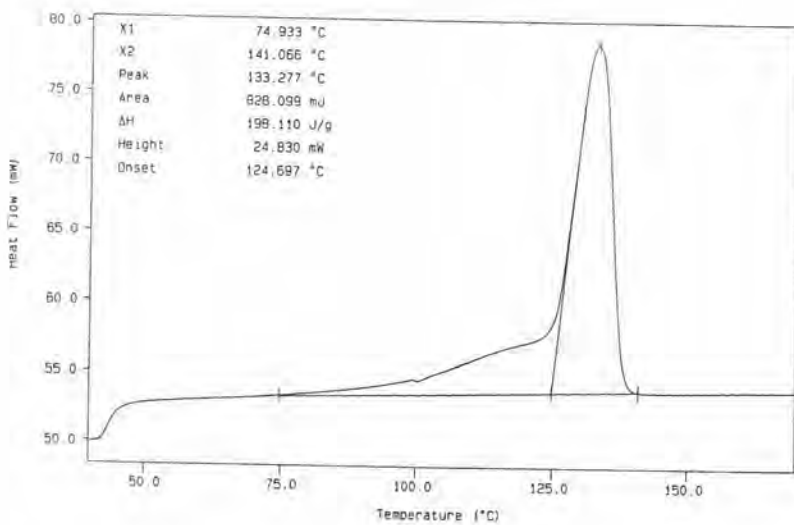
Thermogram of unfilled HDPE annealed at 115 °C for 1 hour.



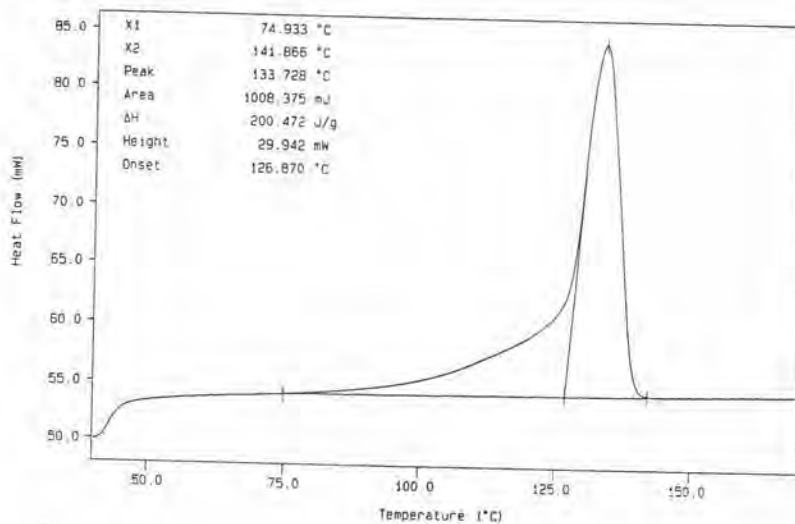
Thermogram of unfilled HDPE annealed at 120 °C for 1 hour.



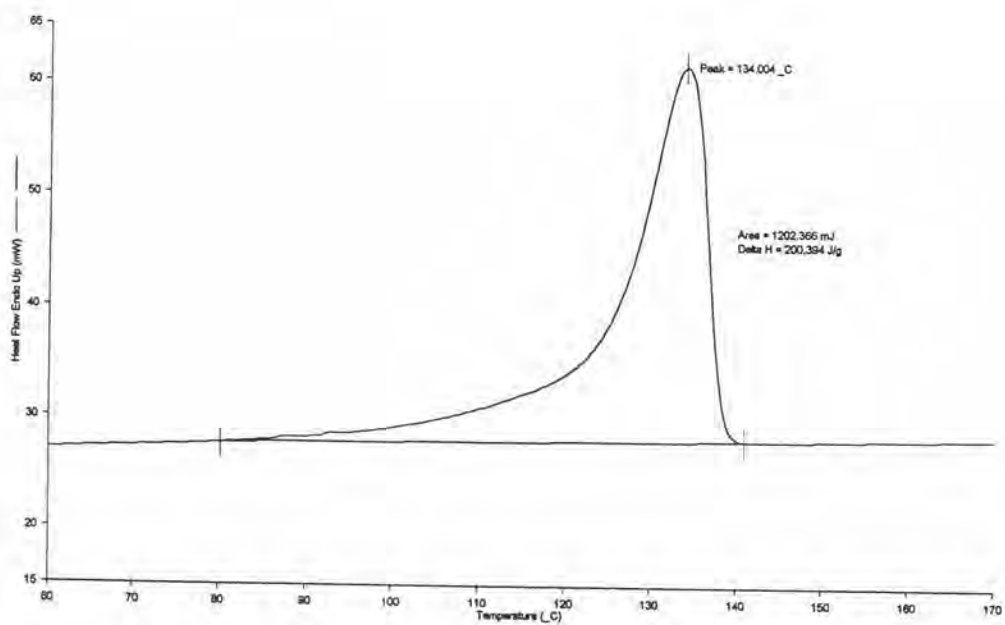
Thermogram of unfilled HDPE annealed at 125 °C for 1 hour.



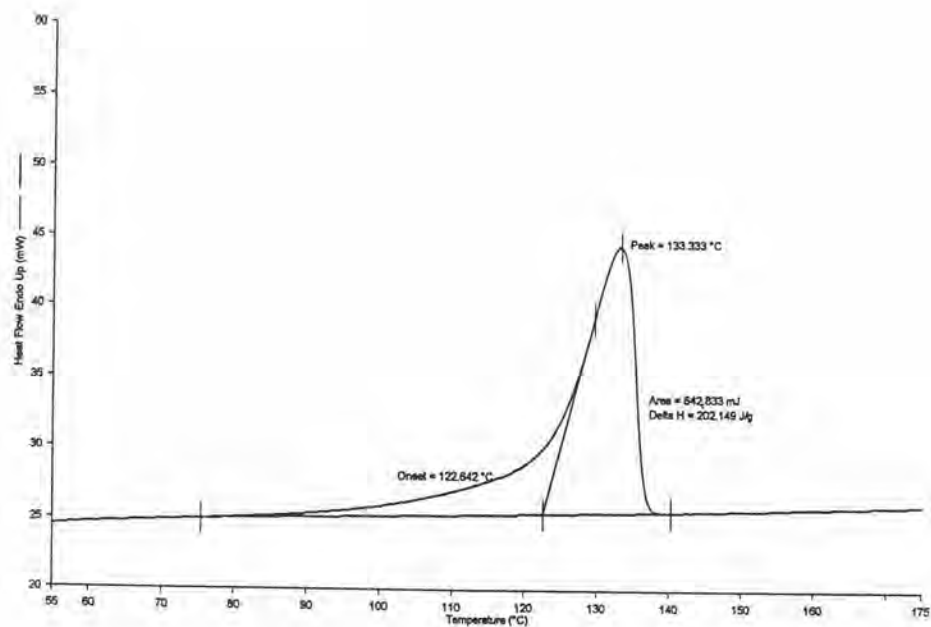
Thermogram of unfilled HDPE annealed at 130 °C for 1 hour.



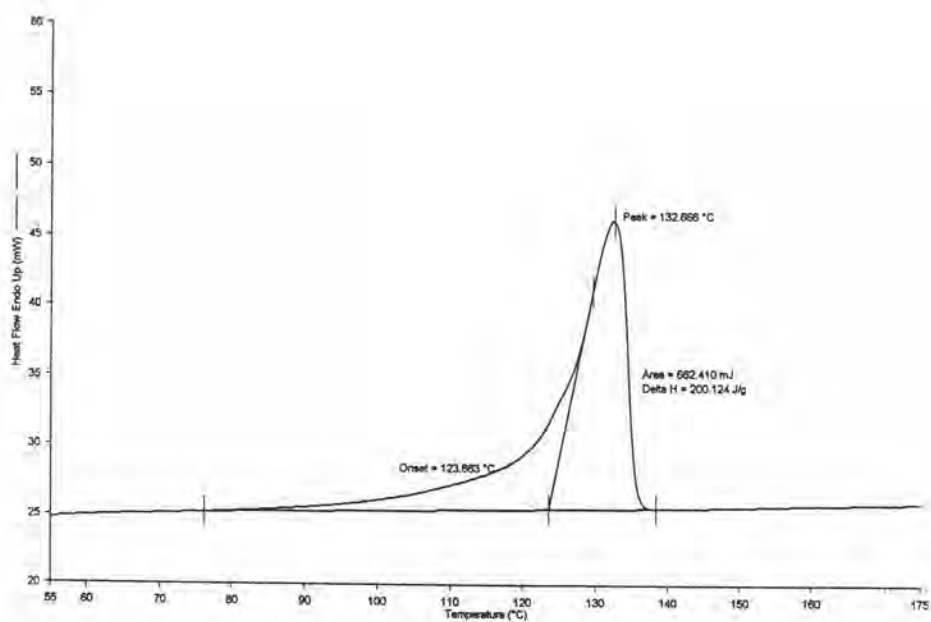
Thermogram of unfilled HDPE annealed at 135 °C for 1 hour.



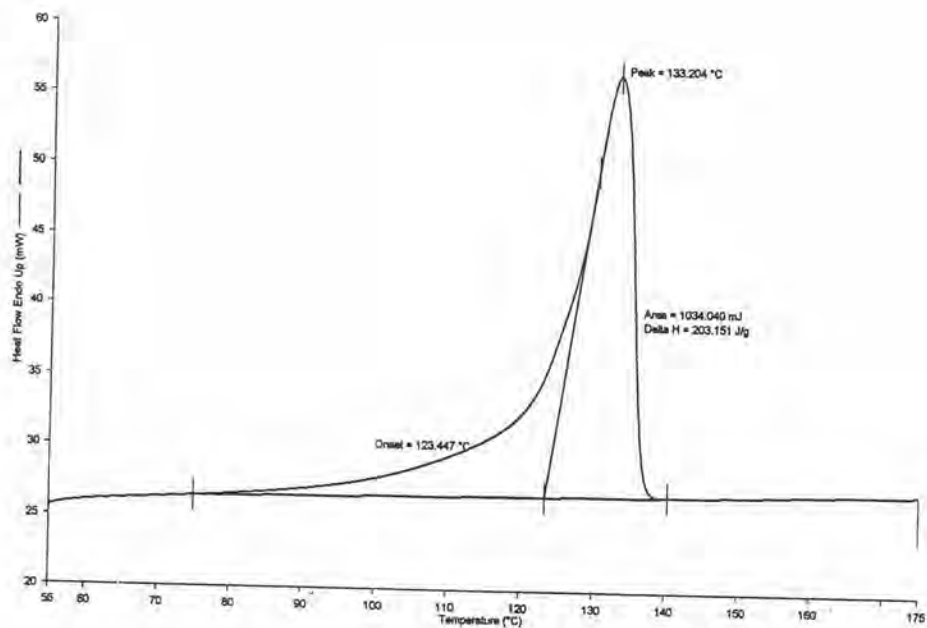
Thermogram of unfilled HDPE annealed at 140 °C for 1 hour.



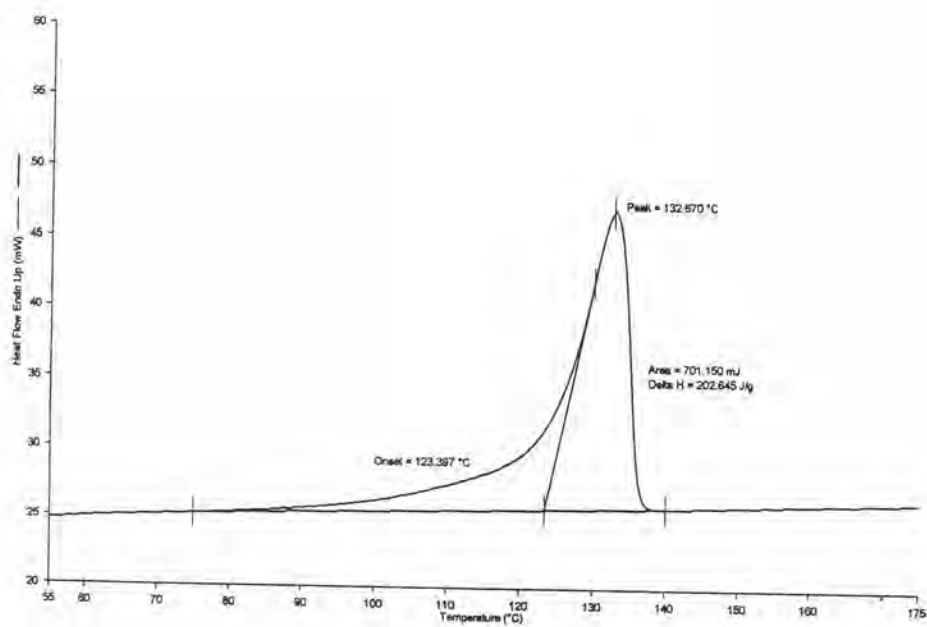
Thermogram of unfilled HDPE annealed at 150 °C for 1 hour.



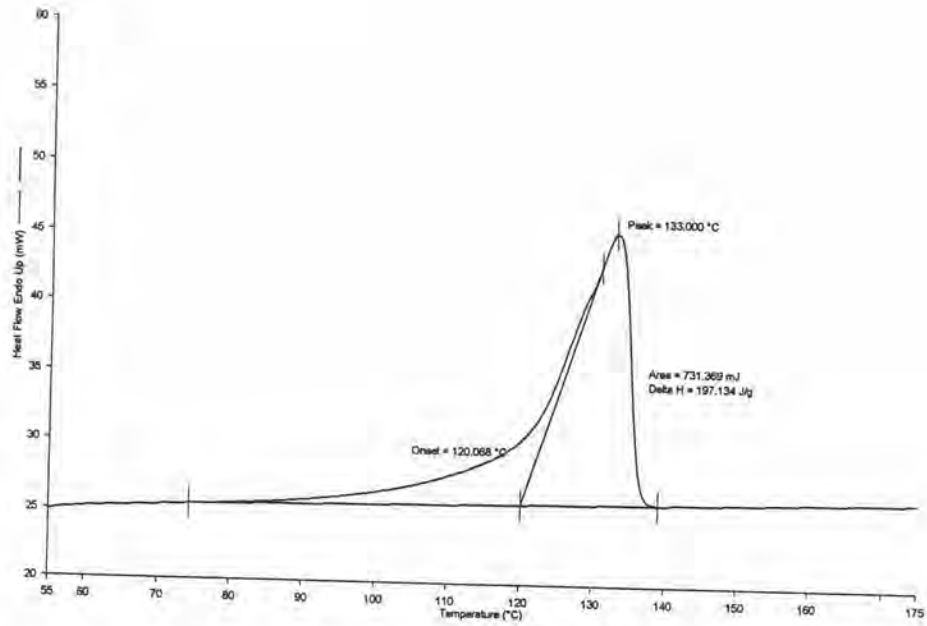
Thermogram of unfilled HDPE annealed at 160 °C for 1 hour.



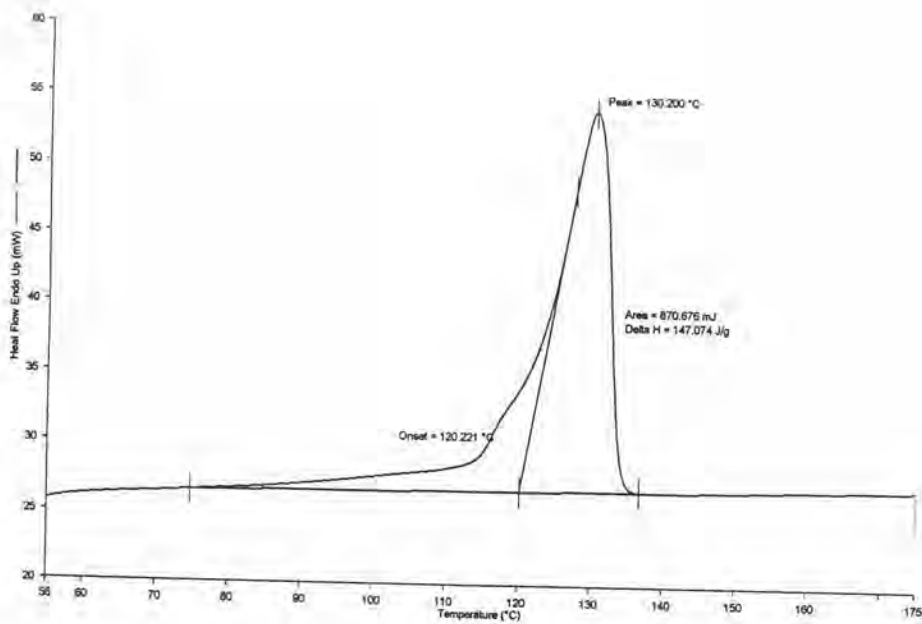
Thermogram of unfilled HDPE annealed at 170 °C for 1 hour.



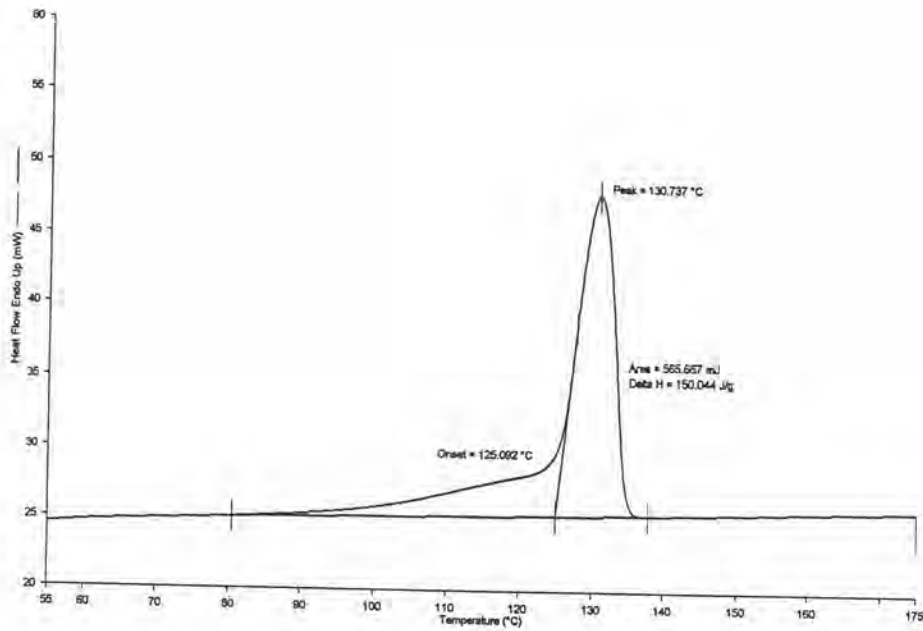
Thermogram of unfilled HDPE annealed at 180 °C for 1 hour.



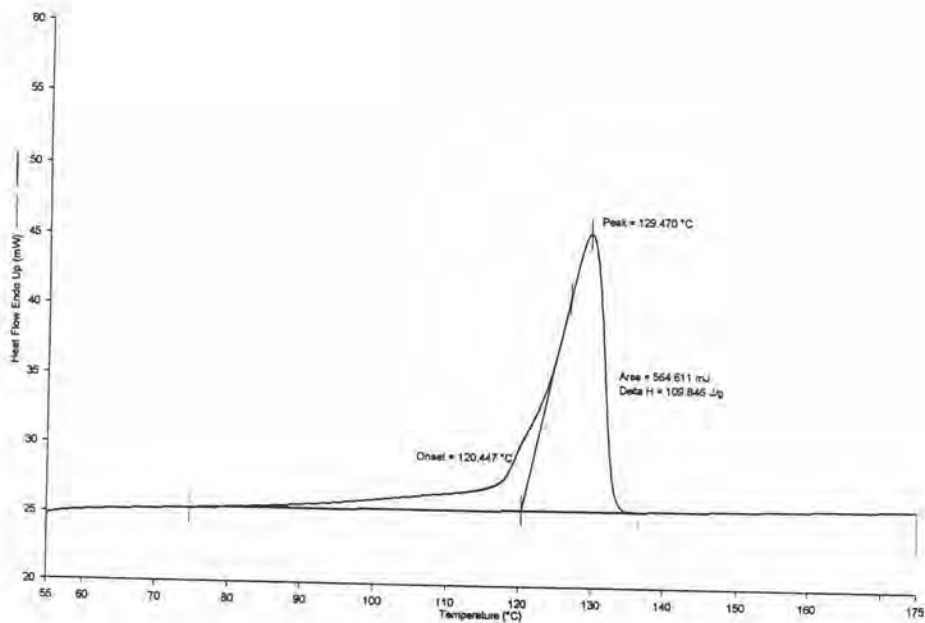
Thermogram of unfilled HDPE annealed at 190 °C for 1 hour.



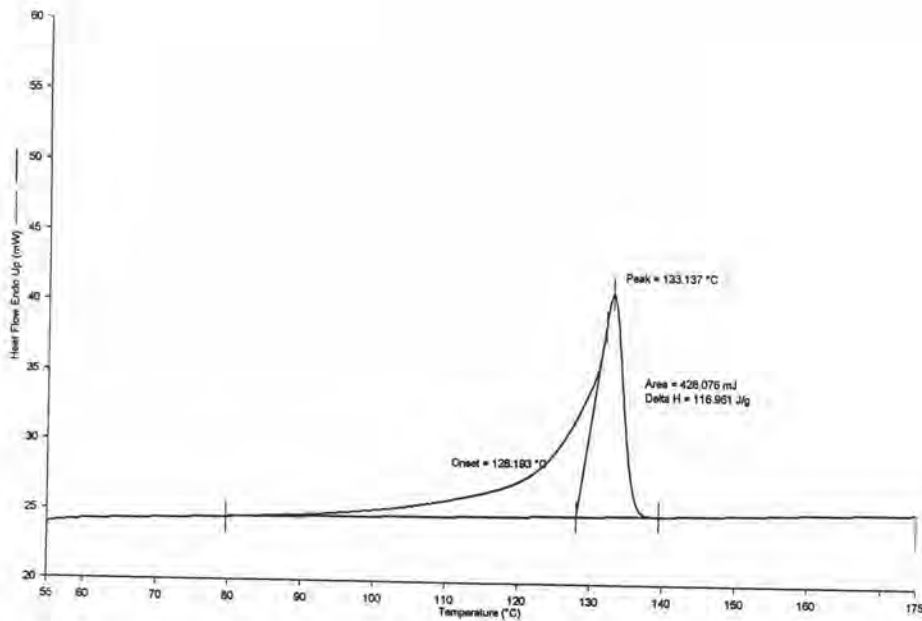
Thermogram of 0.1 CaCO<sub>3</sub> filled HDPE composite annealed at 120 °C for 1 hour.



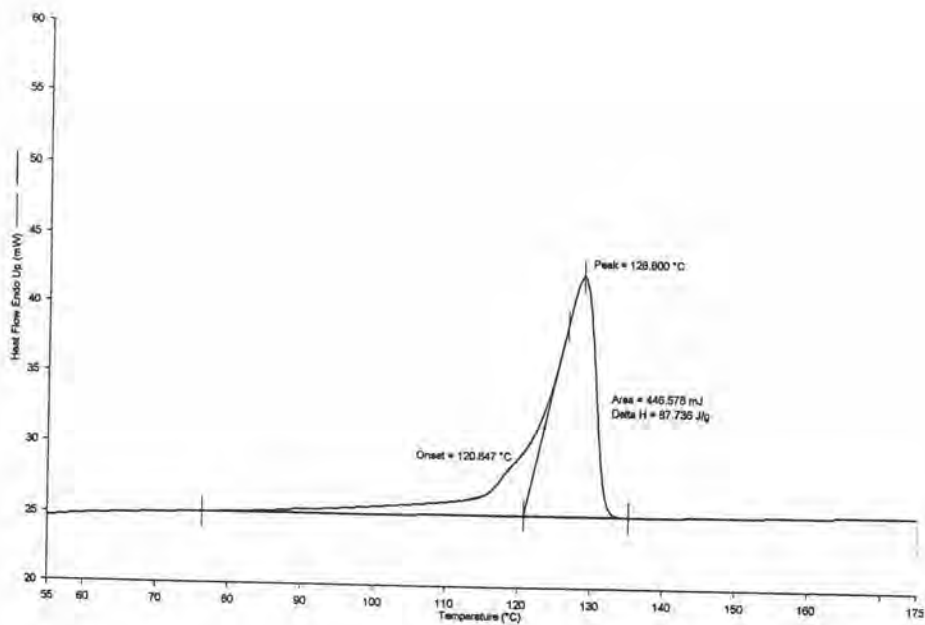
Thermogram of 0.1 CaCO<sub>3</sub> filled HDPE composite annealed at 135 °C for 1 hour.



Thermogram of 0.2 CaCO<sub>3</sub> filled HDPE composite annealed at 120 °C for 1 hour.

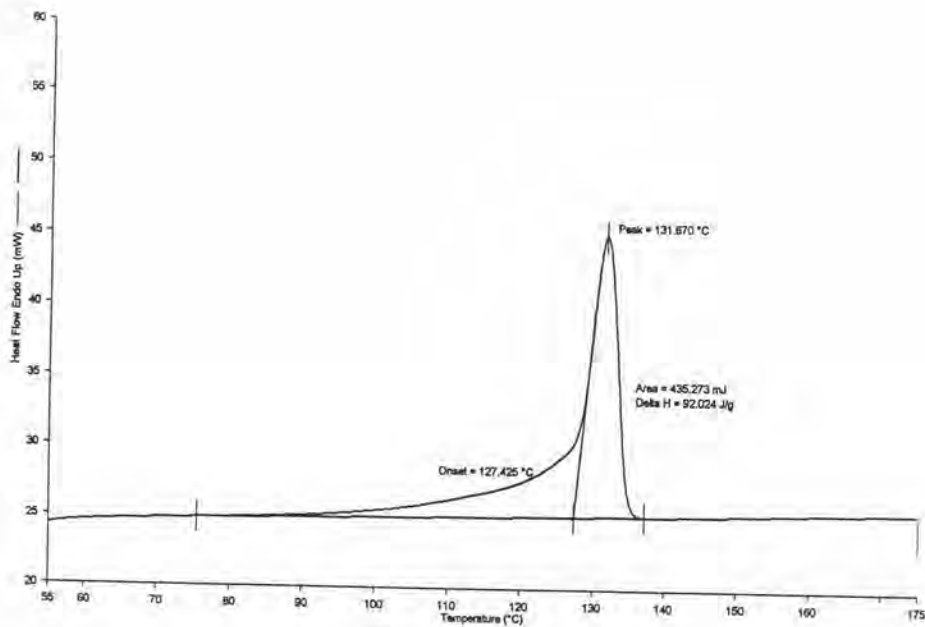


Thermogram of 0.2 CaCO<sub>3</sub> filled HDPE composite annealed at 135 °C for 1 hour.

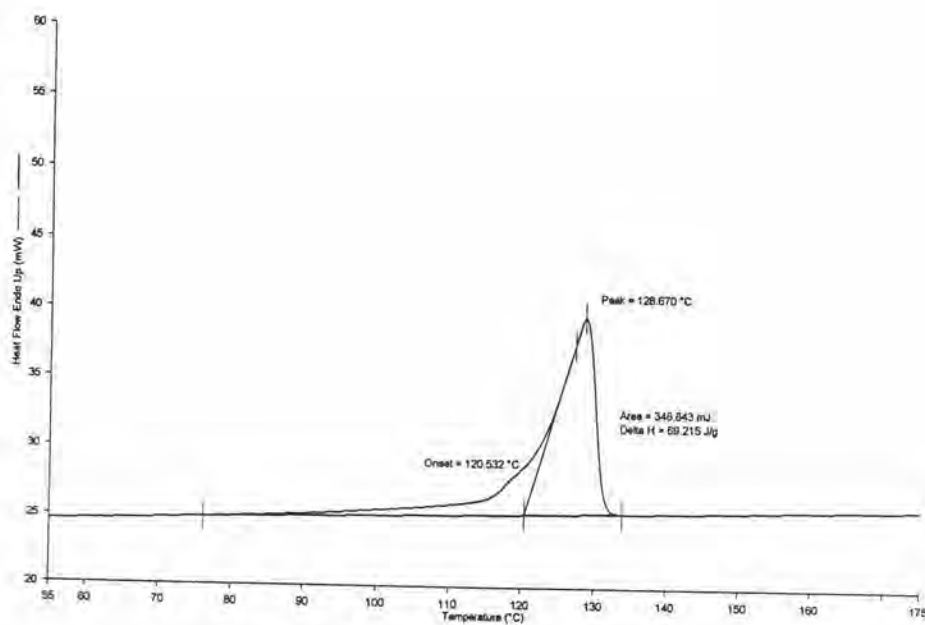


Thermogram of 0.3 CaCO<sub>3</sub> filled HDPE composite annealed at 120 °C for 1 hour.

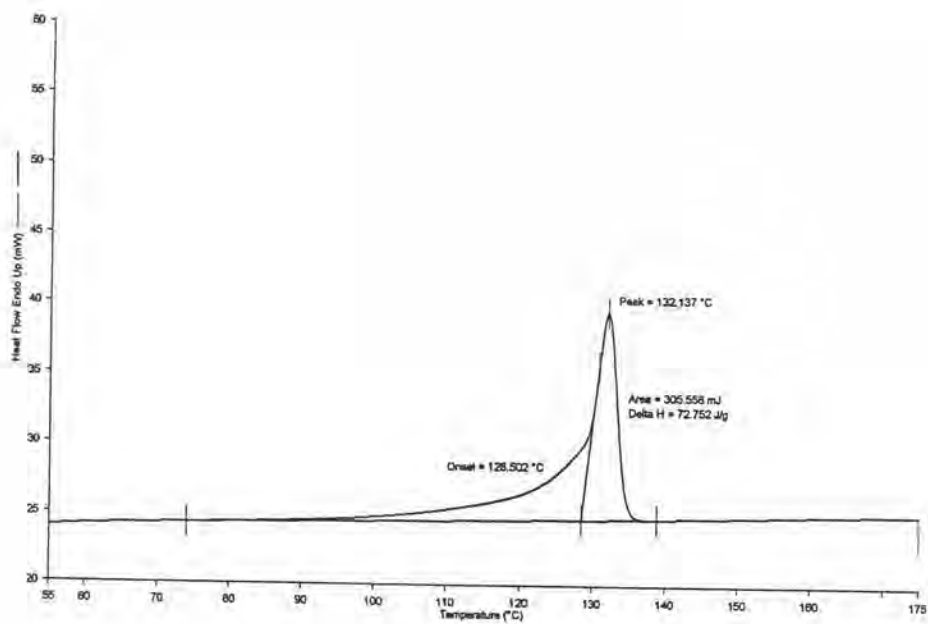




Thermogram of 0.3 CaCO<sub>3</sub> filled HDPE composite annealed at 135 °C for 1 hour.



Thermogram of 0.4 CaCO<sub>3</sub> filled HDPE composite annealed at 120 °C for 1 hour.



Thermogram of 0.4 CaCO<sub>3</sub> filled HDPE composite annealed at 135 °C for 1 hour.

## **Curriculum Vitae**

Miss Sutida Teimprateeb was born in January, 27, 1975 in Bangkok. She graduated in Bachelor degree in the Faculty of Science in Department of Materials Science (Polymer & Textile) from Chulalongkorn University in 1995. She began her Master Degree study in June 1996 and completed the programme in April 1998.