

## Tracking of Reaction of Thermosetting Resin by Use of FT-IR

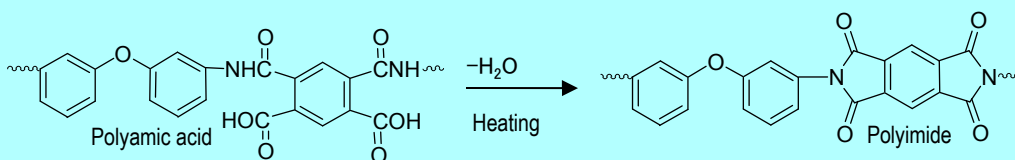
### Summary

It is possible to track the thermosetting reaction of a thermosetting resin by making continuous measurement by use of FT-IR while heating it at the hot stage.

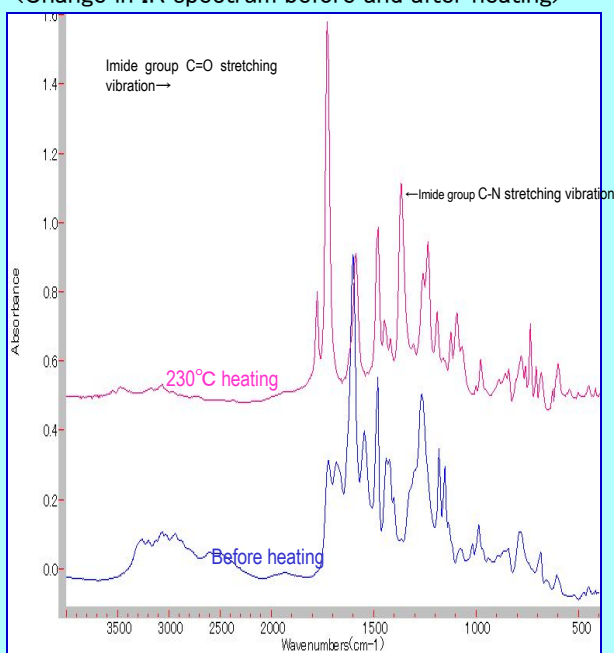
### Example of measurement Tracking of imidization reaction

Polyimide is used widely in electronic and functional materials.

We tracked the reaction in which amic acid was imidized by heating by using FT-IR.

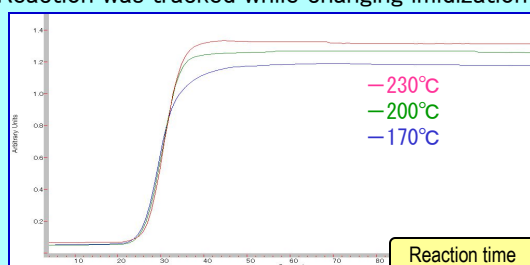


<Change in IR spectrum before and after heating>



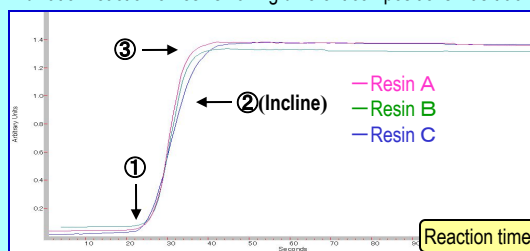
When polyamic acid is heated, absorption derived from the imide group appears at  $1725\text{cm}^{-1}$  and  $1366\text{cm}^{-1}$ . The formation of the imide group is tracked from imide group C-N stretching vibration at  $1366\text{cm}^{-1}$ .

<Reaction was tracked while changing imidization temp>



Reaction was tracked while changing imidization temperature. It can be seen that imidization rate varies with temperature.

<Imidization reaction of resins having different compositions was tracked.>



Reaction of resins having different compositions was tracked. ① Imidization start temperature, ② imidization speed and ③ imidization rate vary from resin to resin.

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