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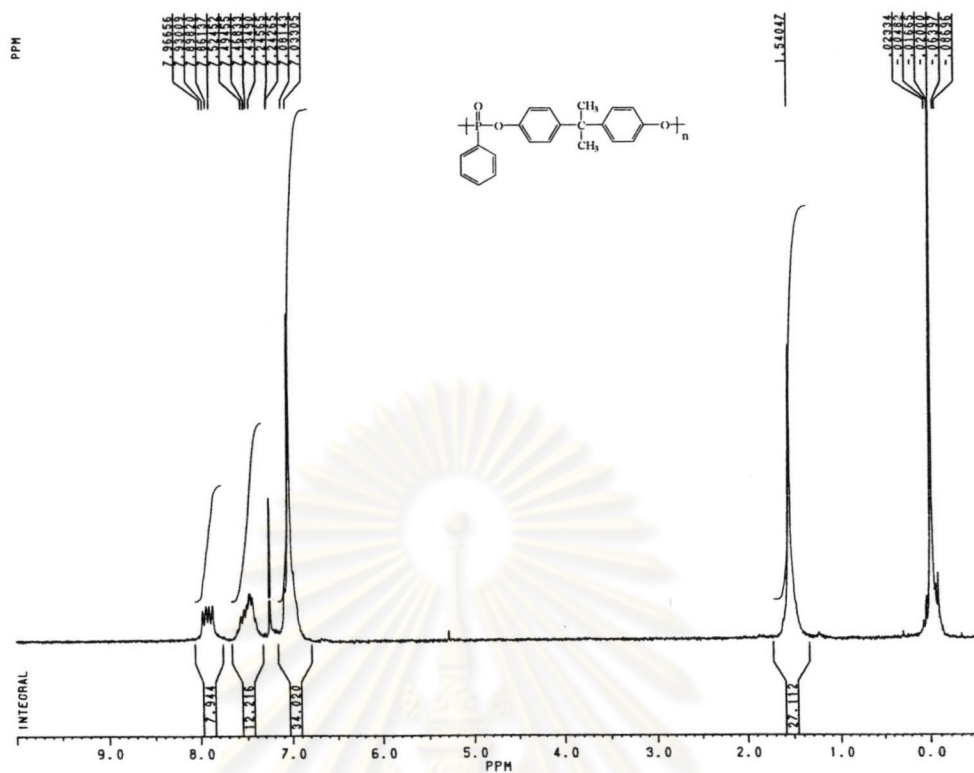


Fig 1A The  $^1\text{H}$ -NMR spectrum of polymer 16a

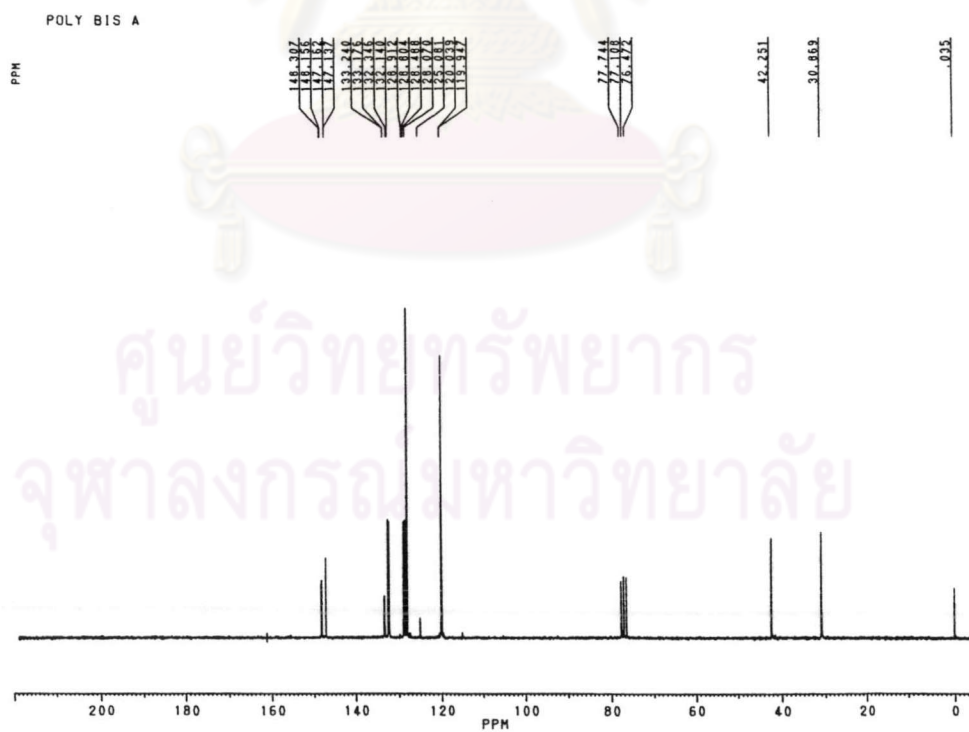


Fig 1B The  $^{13}\text{C}$ -NMR spectrum of polymer 16a

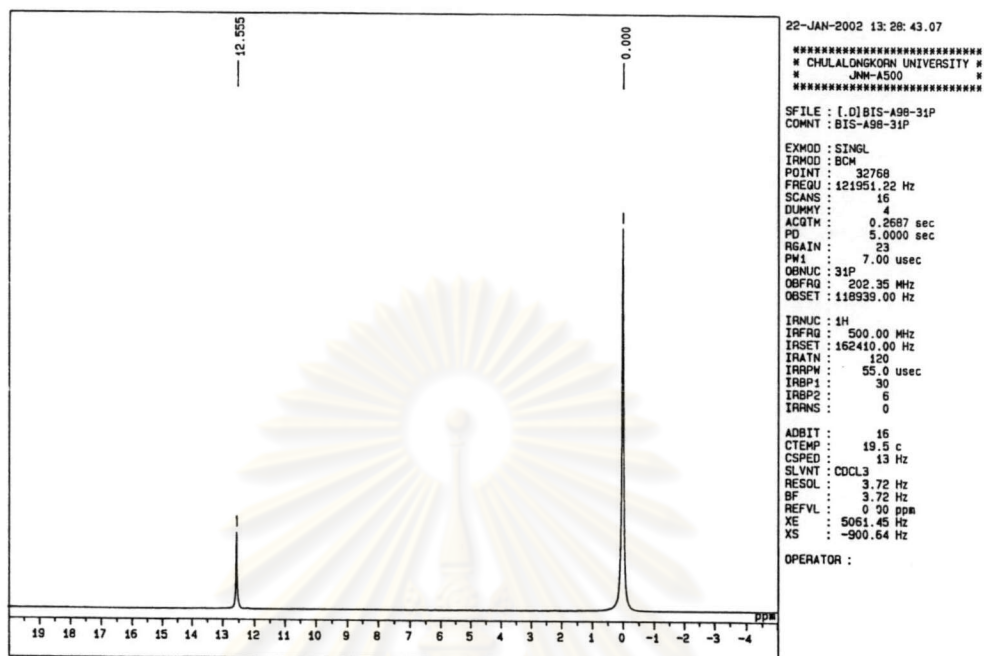


Fig 1C The  $^{31}\text{P}$ -NMR spectrum of polymer 16a

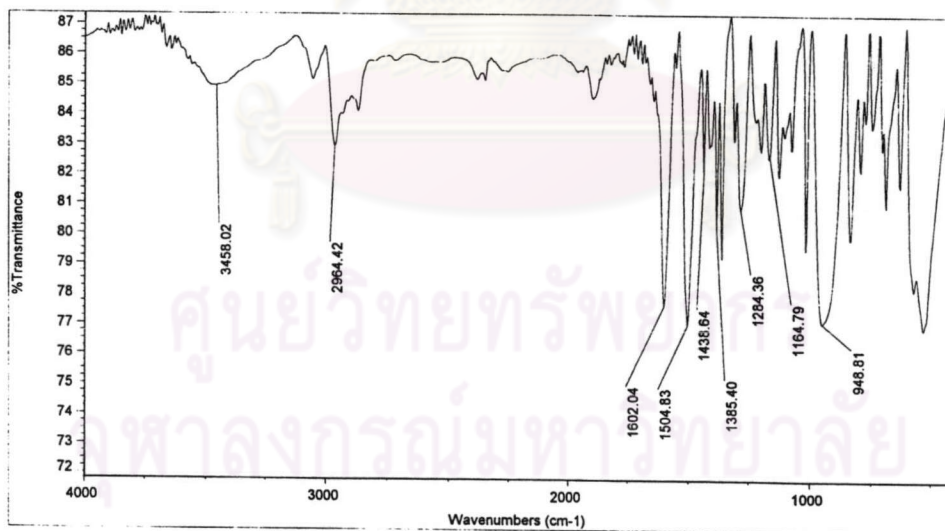


Fig 1D The IR spectrum of polymer 16a

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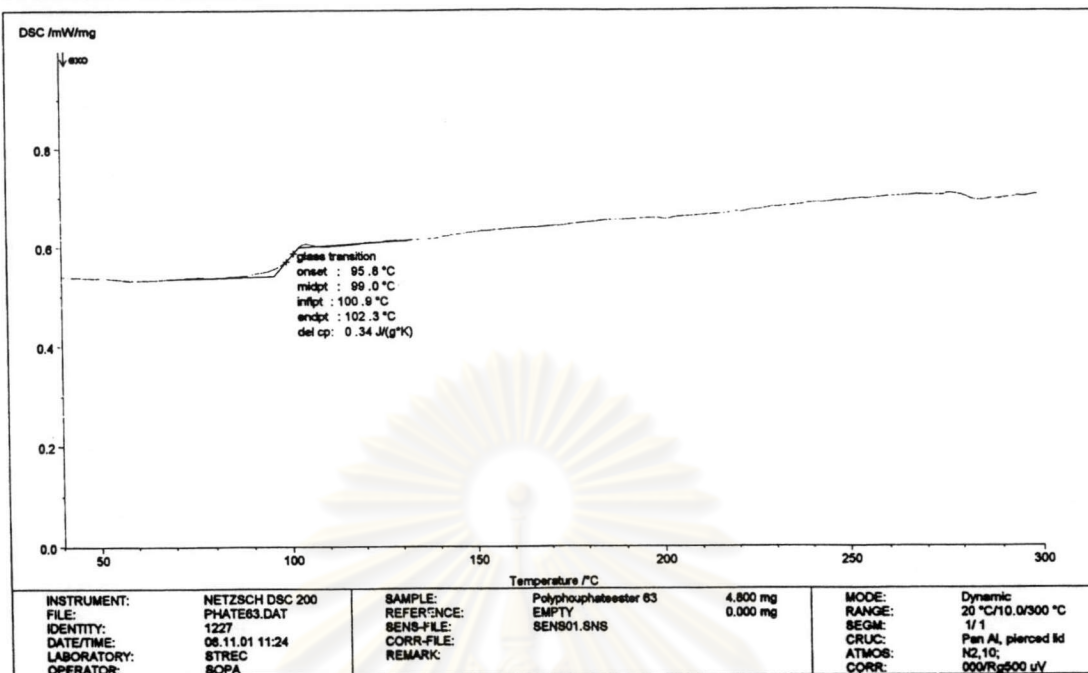


Fig 1E The DSC thermogram of polymer 16a

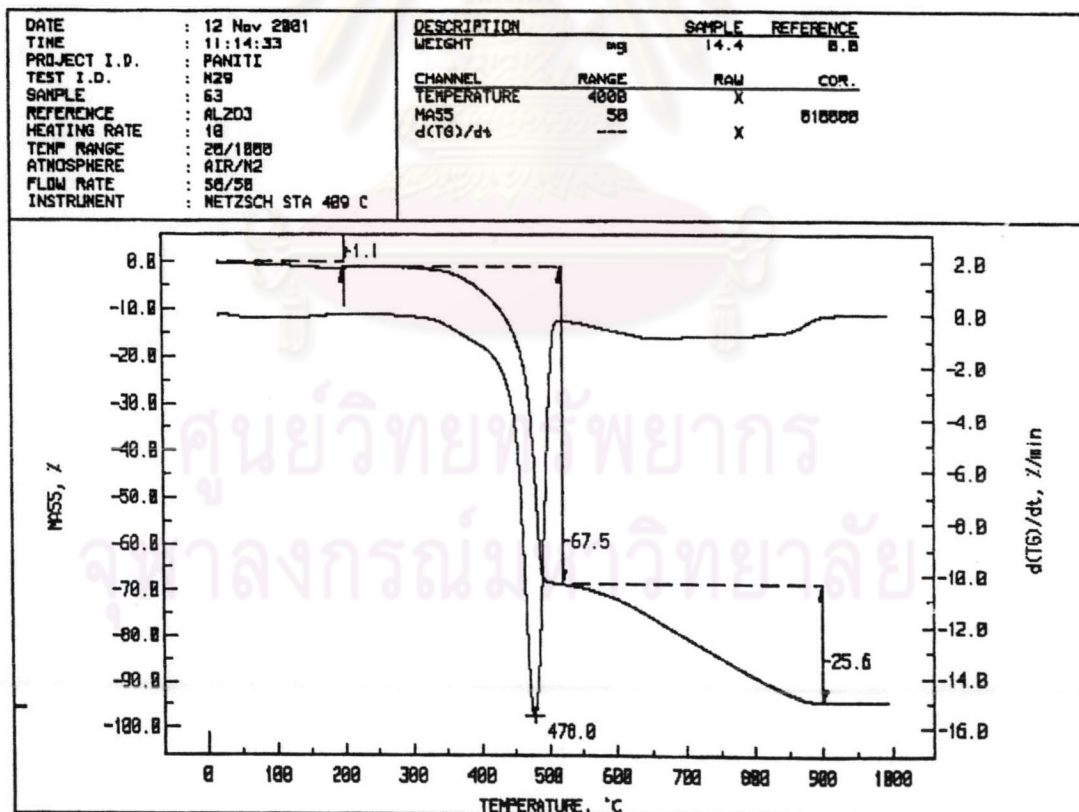


Fig 1F The TGA thermogram of polymer 16a

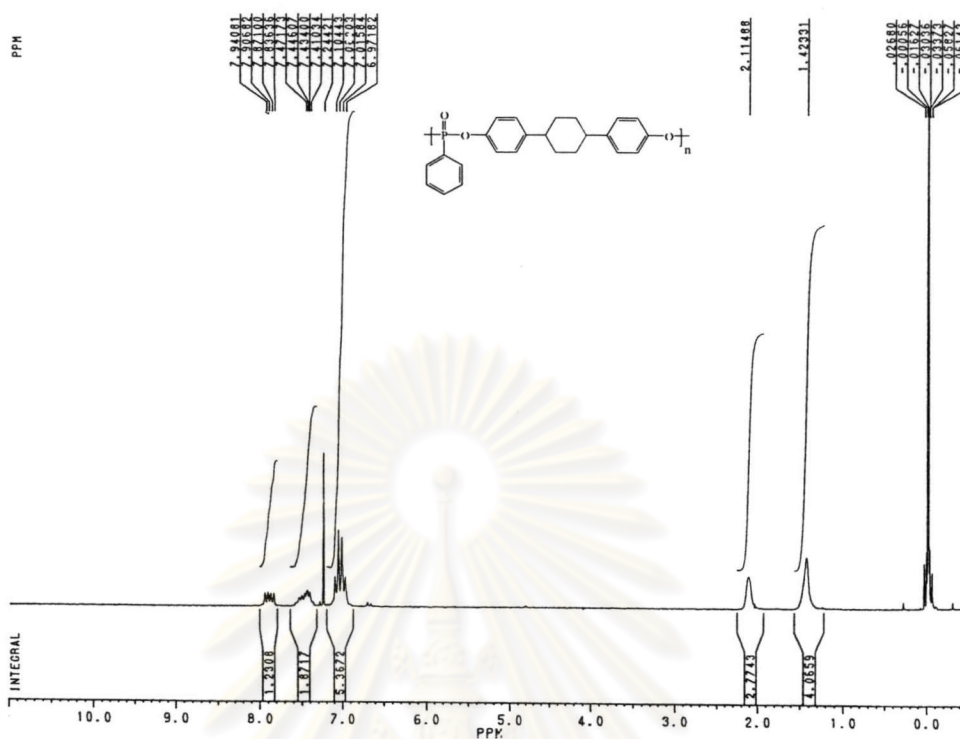


Fig 2A The  $^1\text{H-NMR}$  spectrum of polymer 16b

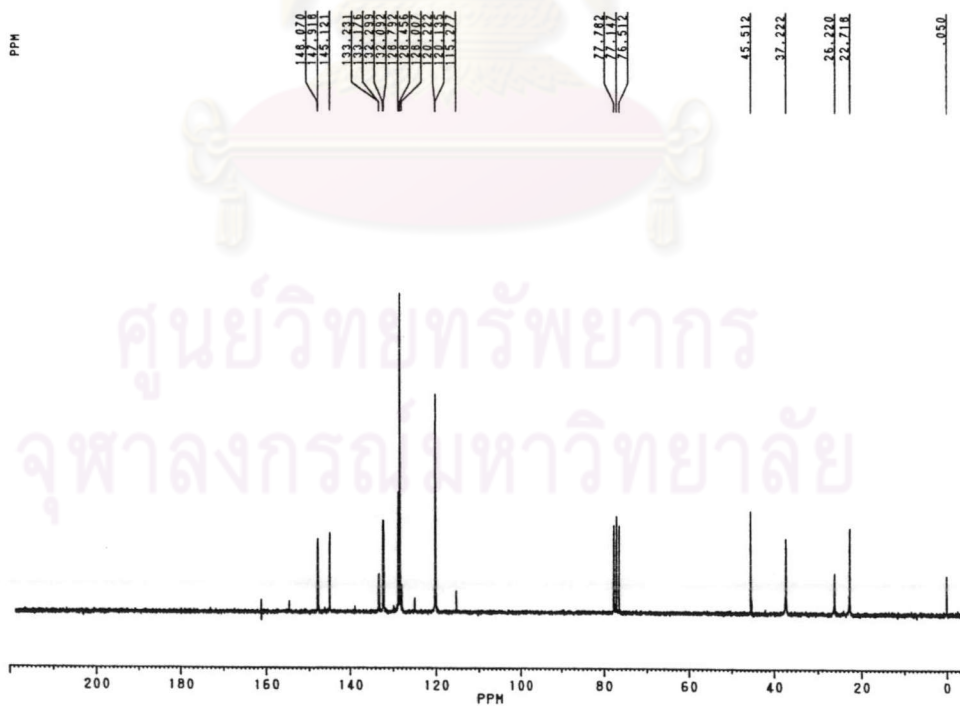


Fig 2B The  $^{13}\text{C-NMR}$  spectrum of polymer 16b



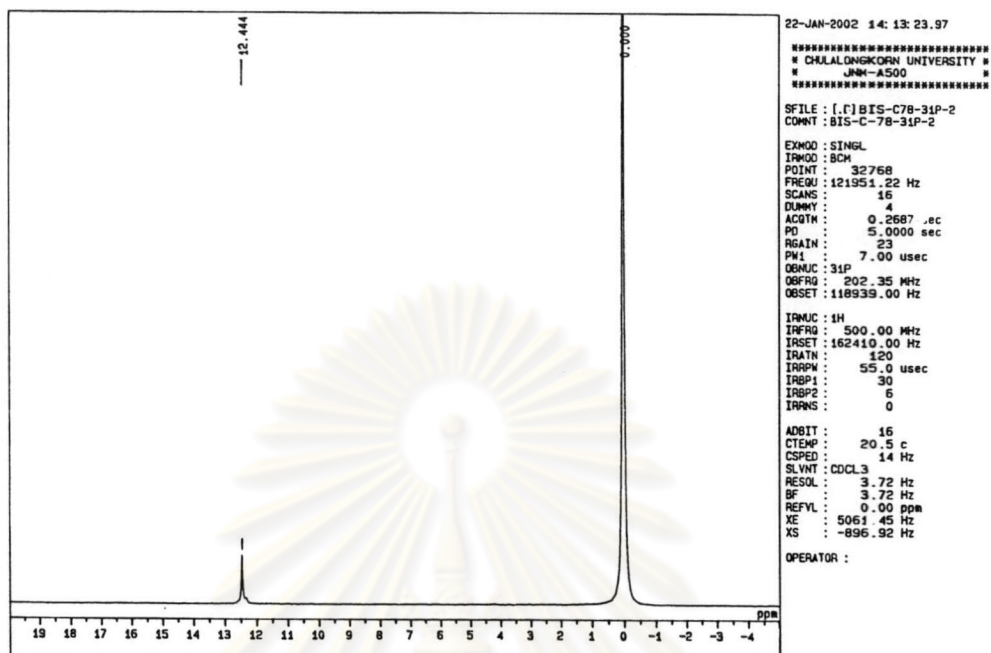


Fig 2C The  $^{31}\text{P}$ -NMR spectrum of polymer 16b

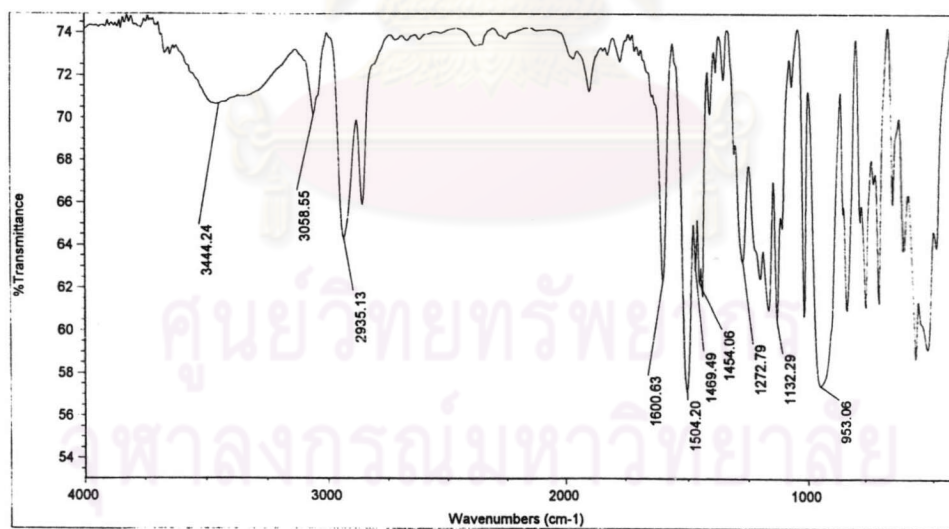


Fig 2D The IR spectrum of polymer 16b

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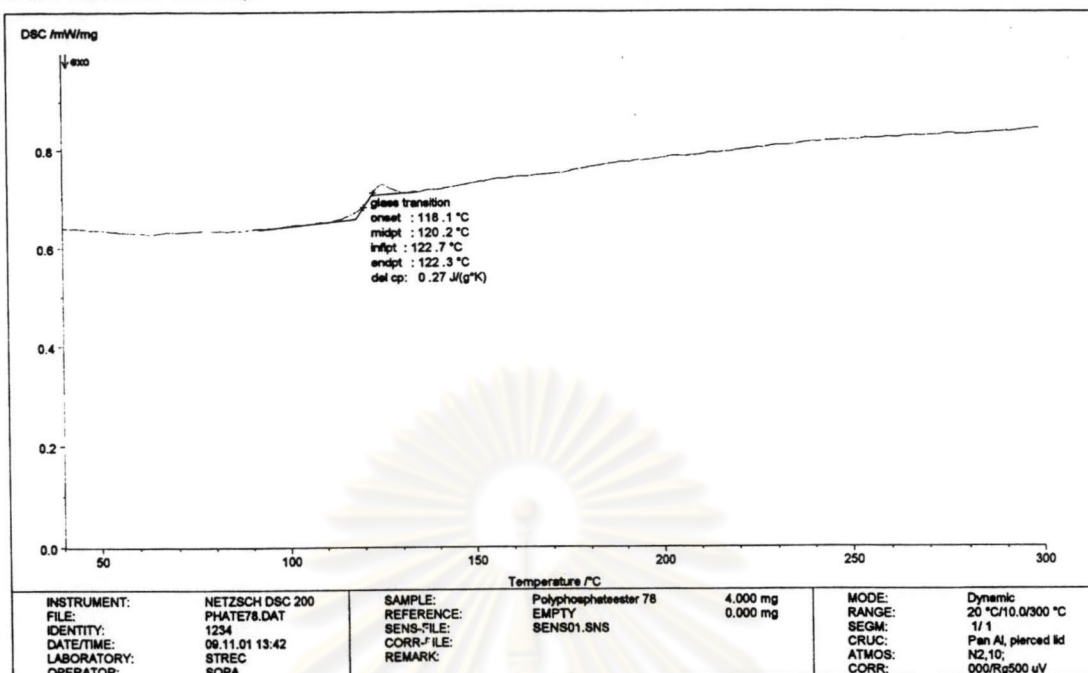


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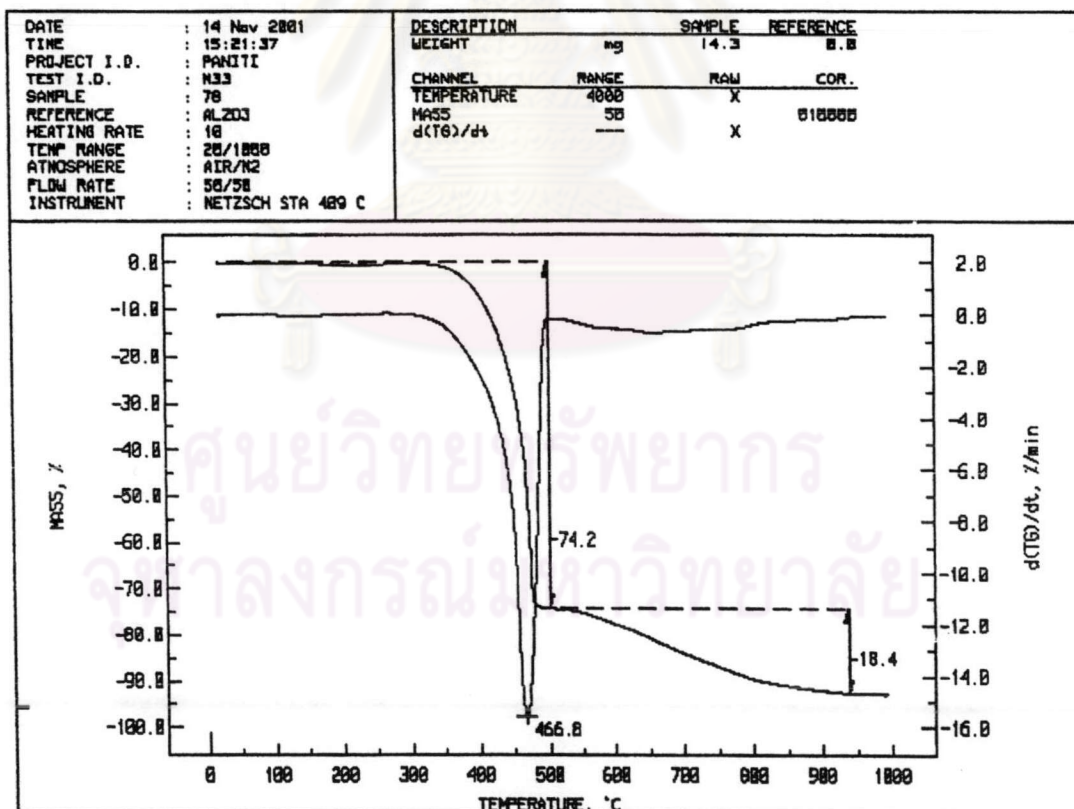


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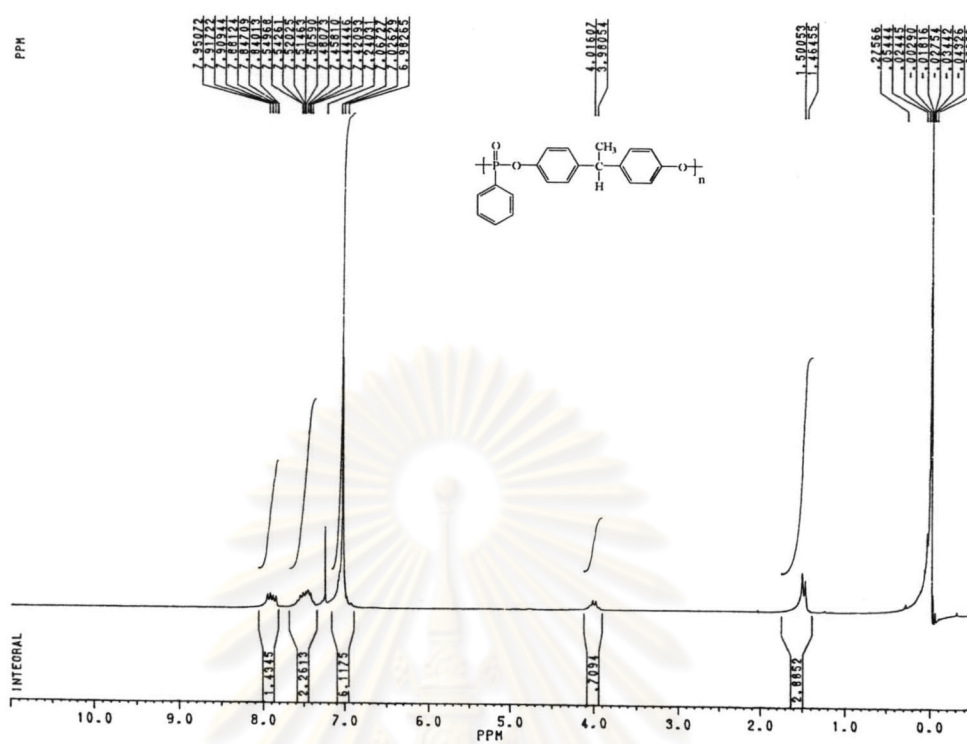


Fig 3A The  $^1\text{H}$ -NMR spectrum of polymer 16c

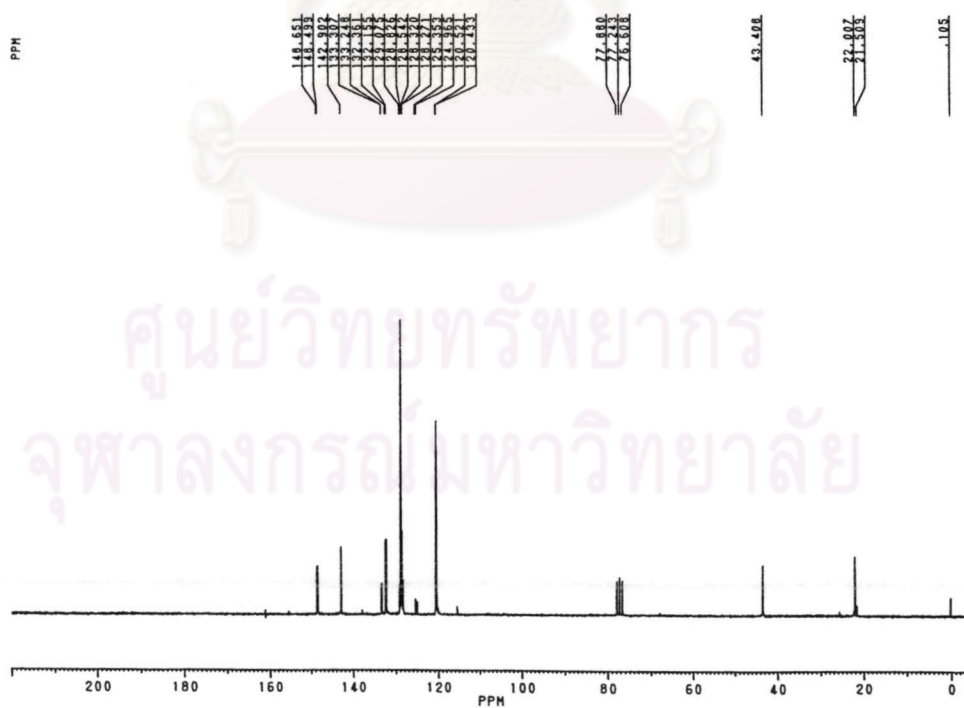


Fig 3B The  $^{13}\text{C}$ -NMR spectrum of polymer 16c

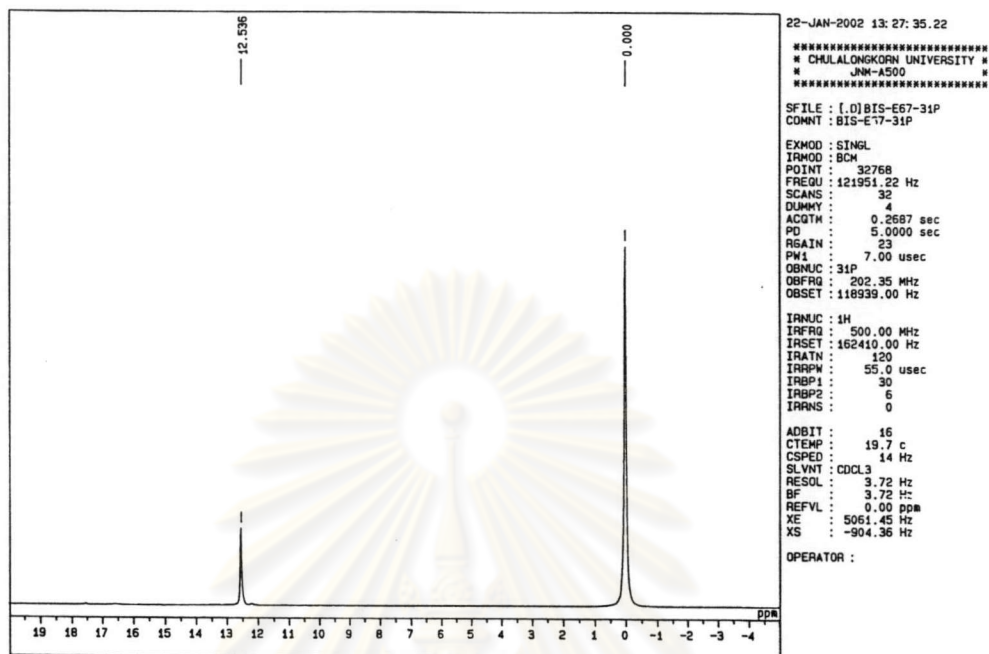


Fig 3C The  $^{31}\text{P}$ -NMR spectrum of polymer 16c

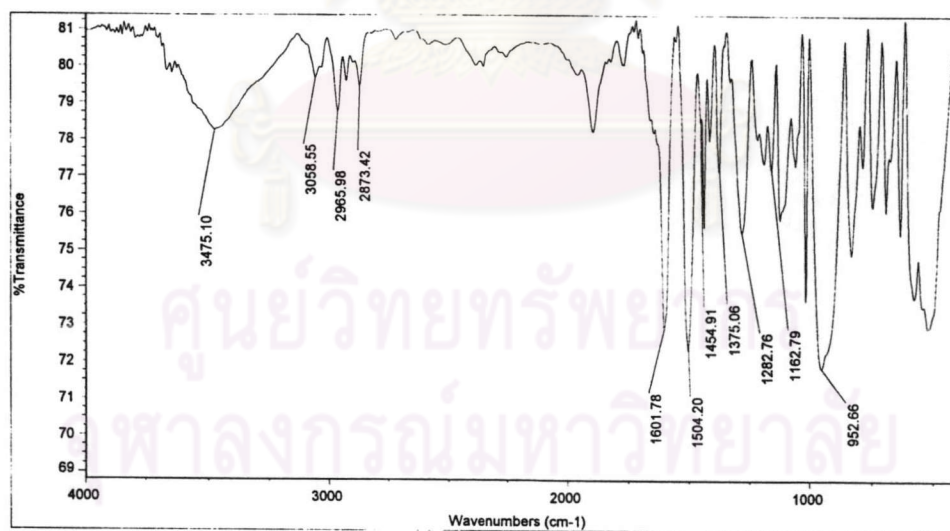


Fig 3D The IR spectrum of polymer 16c

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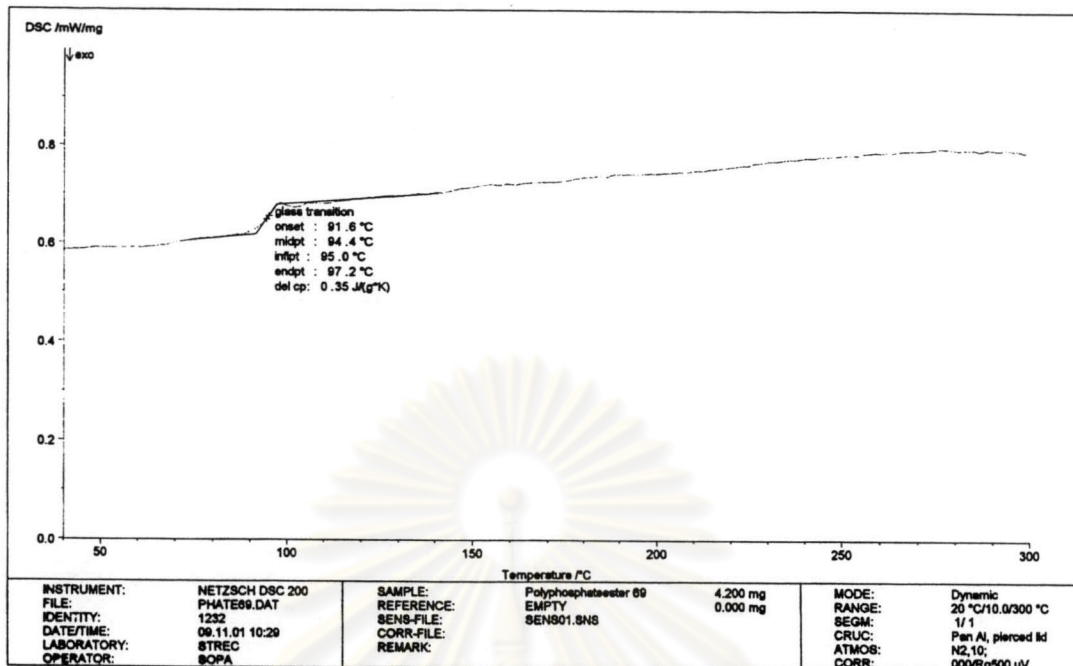


Fig 3E The DSC thermogram of polymer 16c

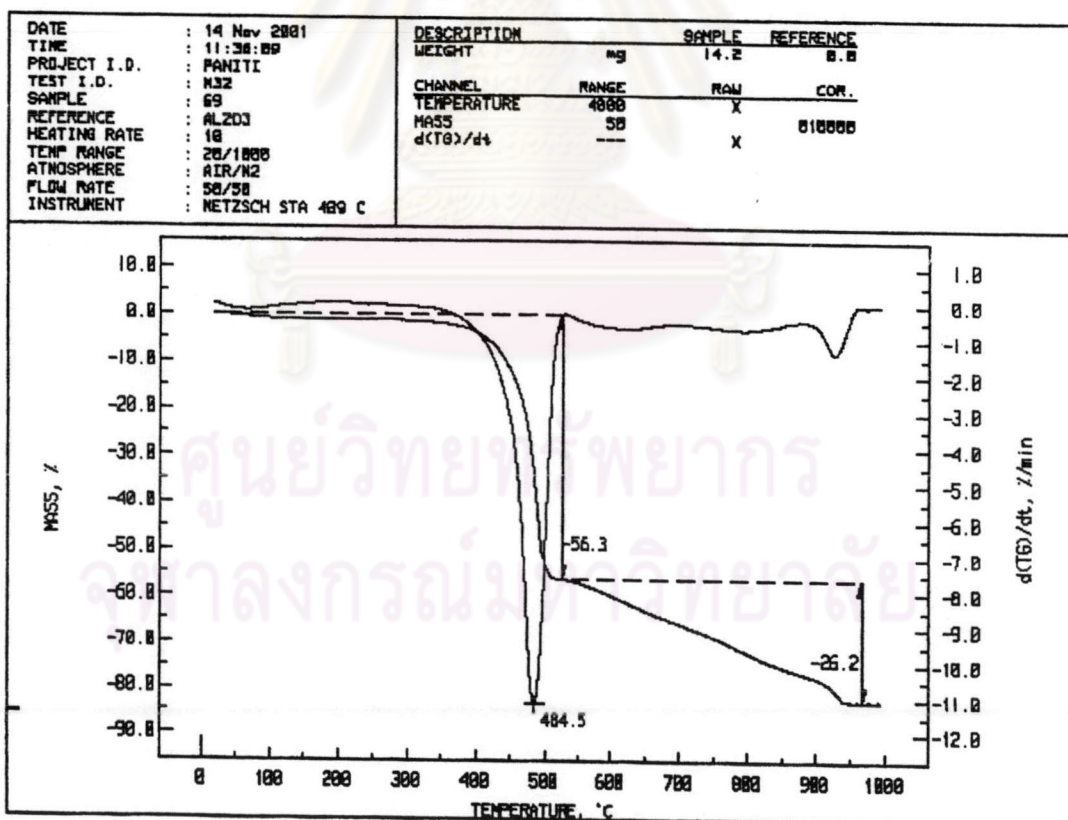
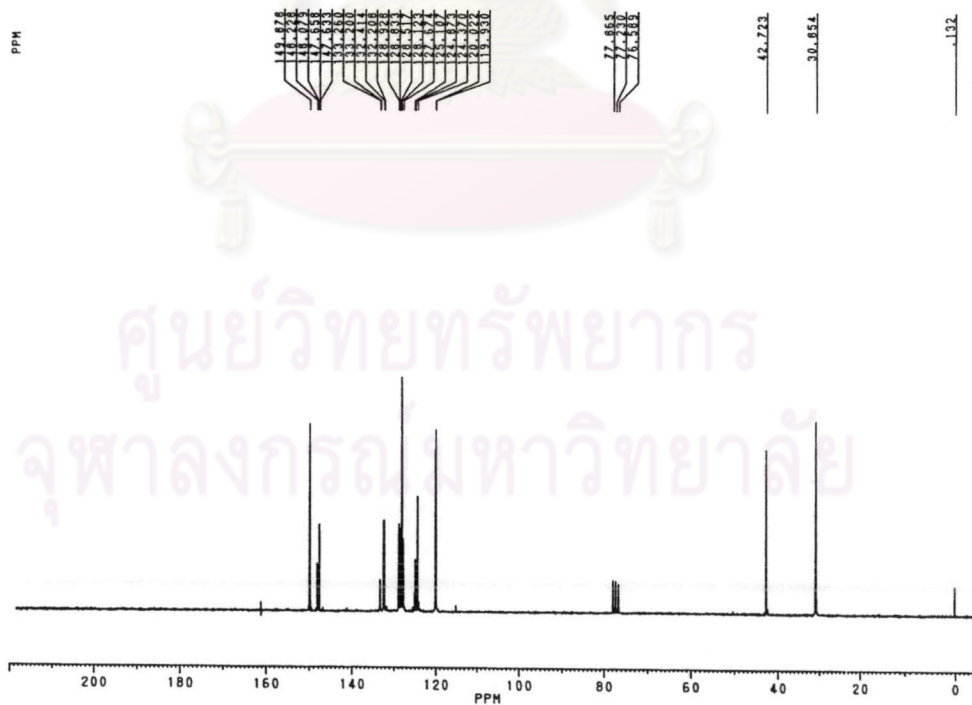
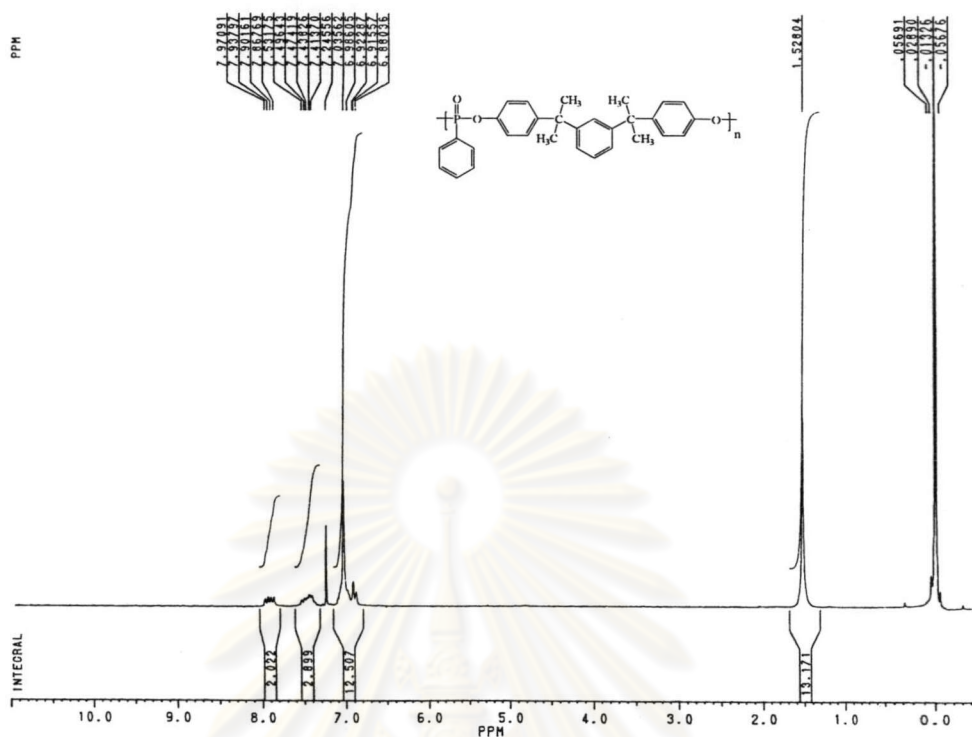


Fig 3F The TGA thermogram of polymer 16c



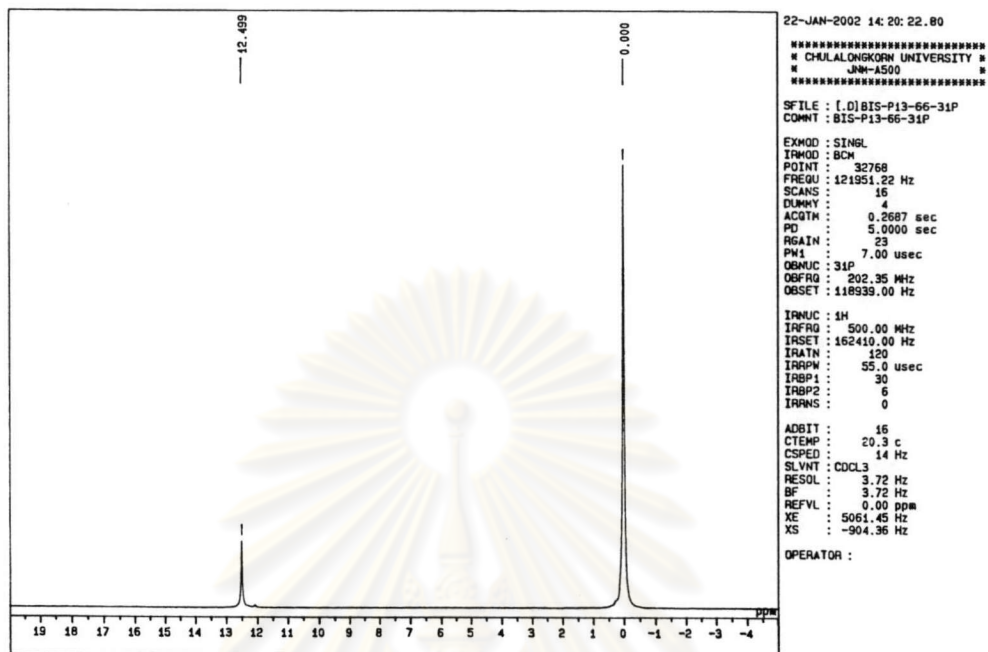


Fig 4C The  $^{31}\text{P}$ -NMR spectrum of polymer 16d

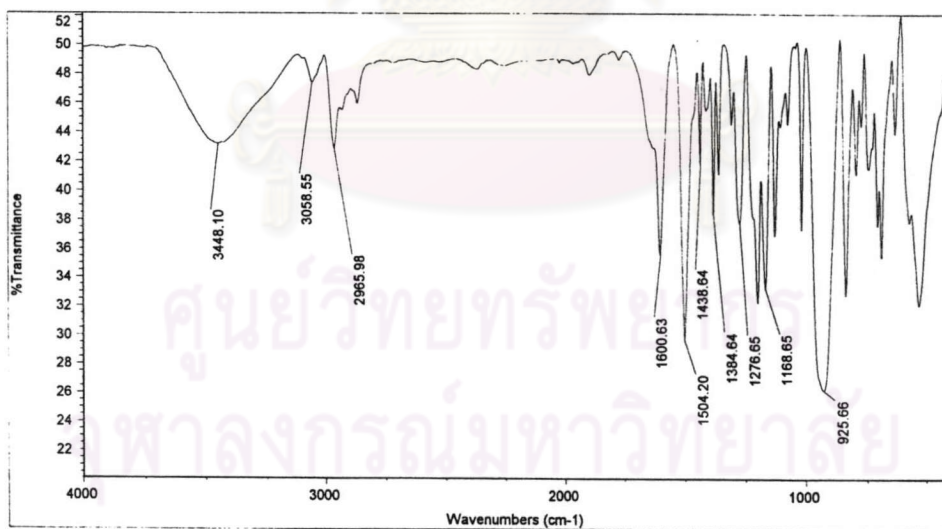


Fig 4D The IR spectrum of polymer 16d

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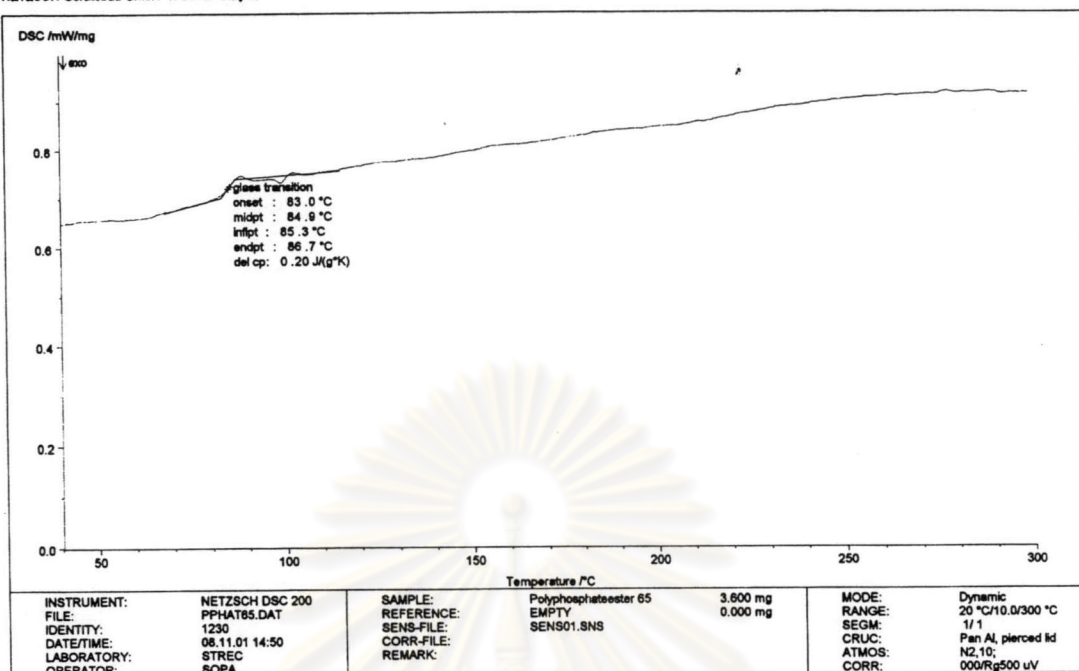


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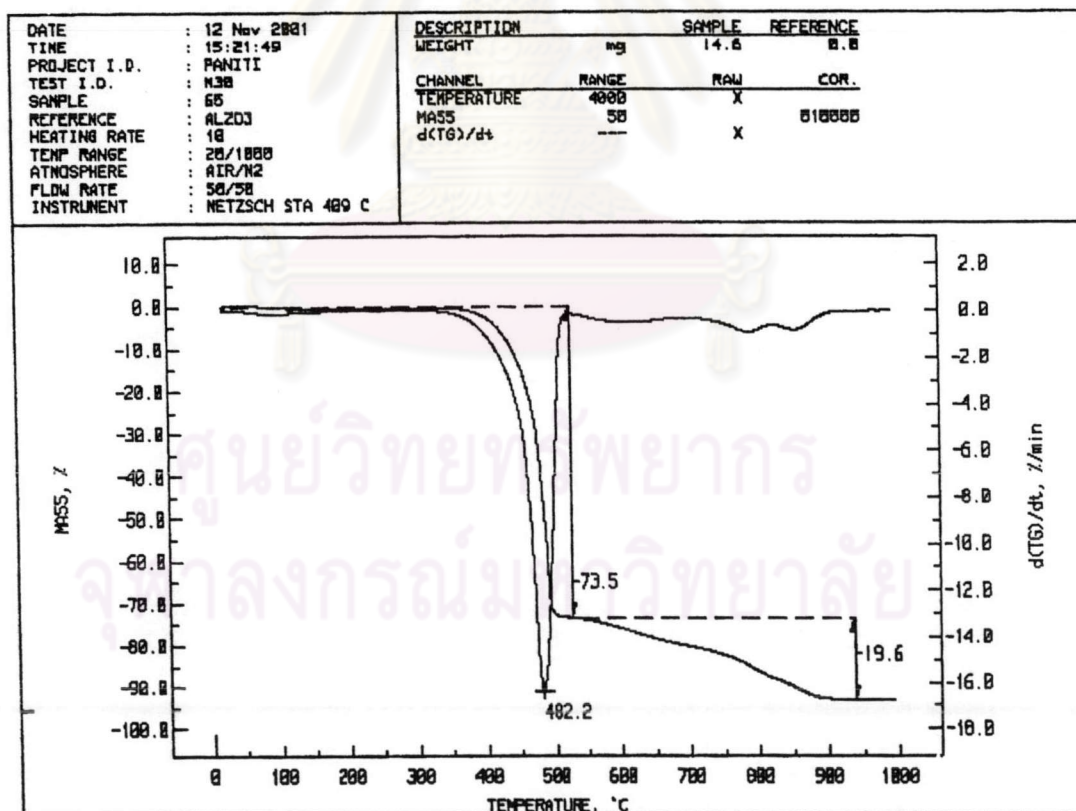
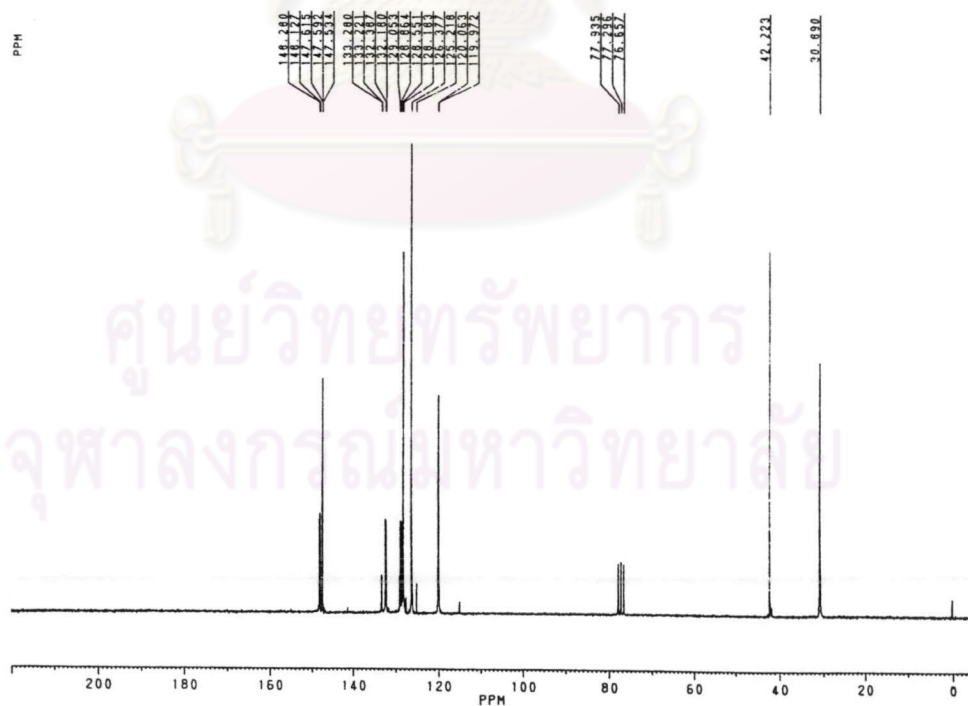
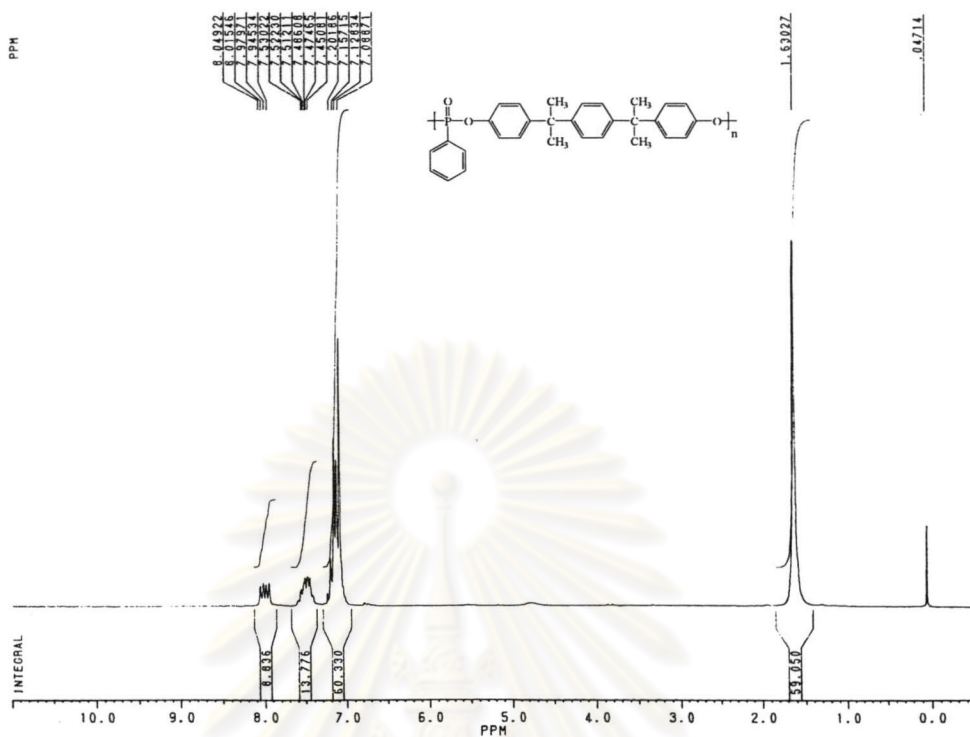


Fig 4F The TGA thermogram of polymer 16d





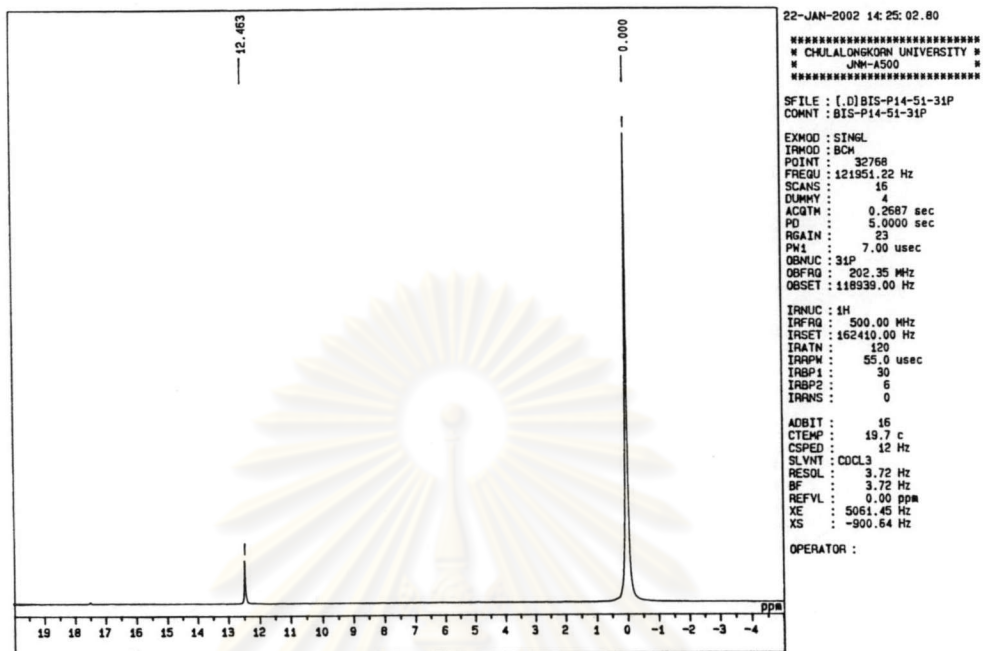


Fig 5C The  $^{31}\text{P}$ -NMR spectrum of polymer 16e

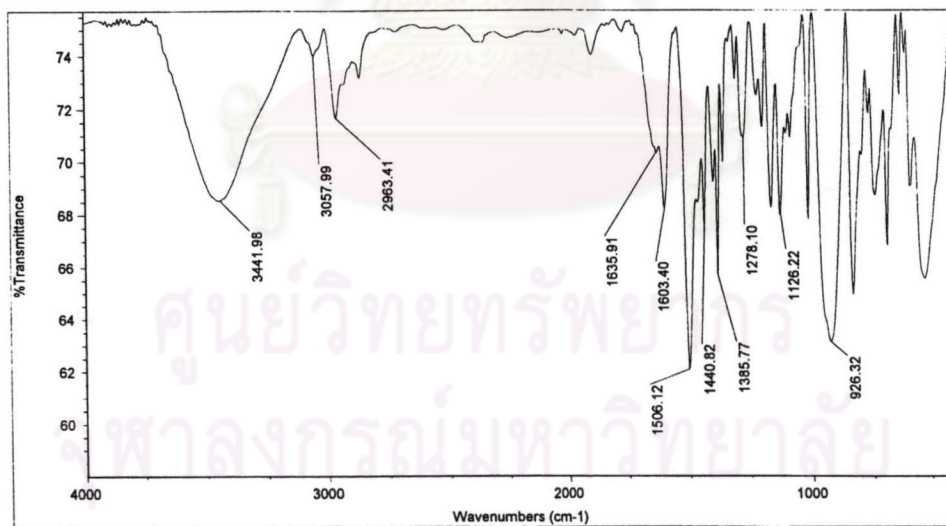


Fig 5D The IR spectrum of polymer 16e

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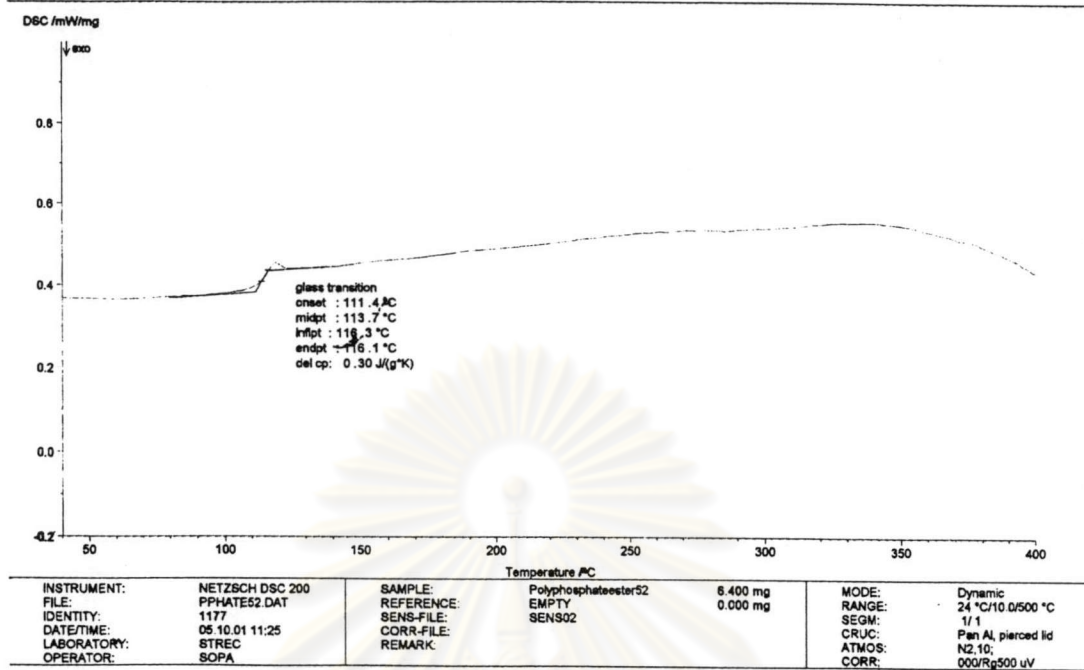


Fig 5E The DSC thermogram of polymer 16e

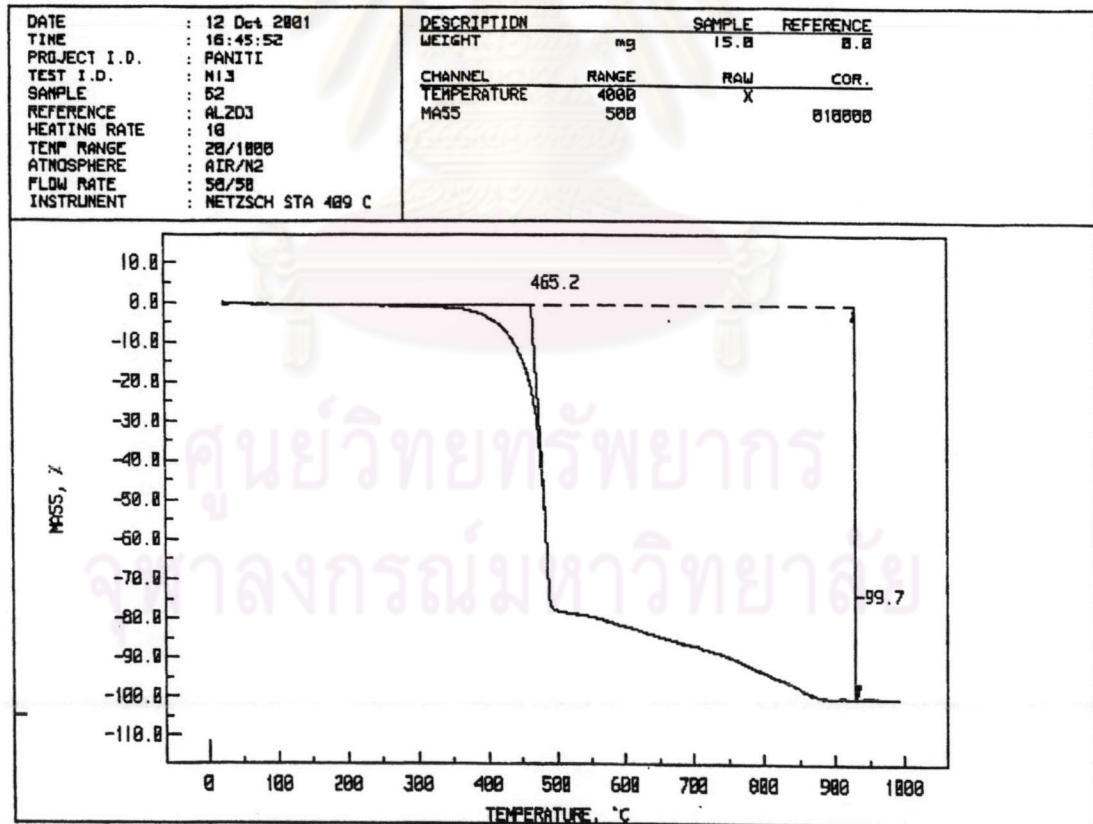


Fig 5F The TGA thermogram of polymer 16e

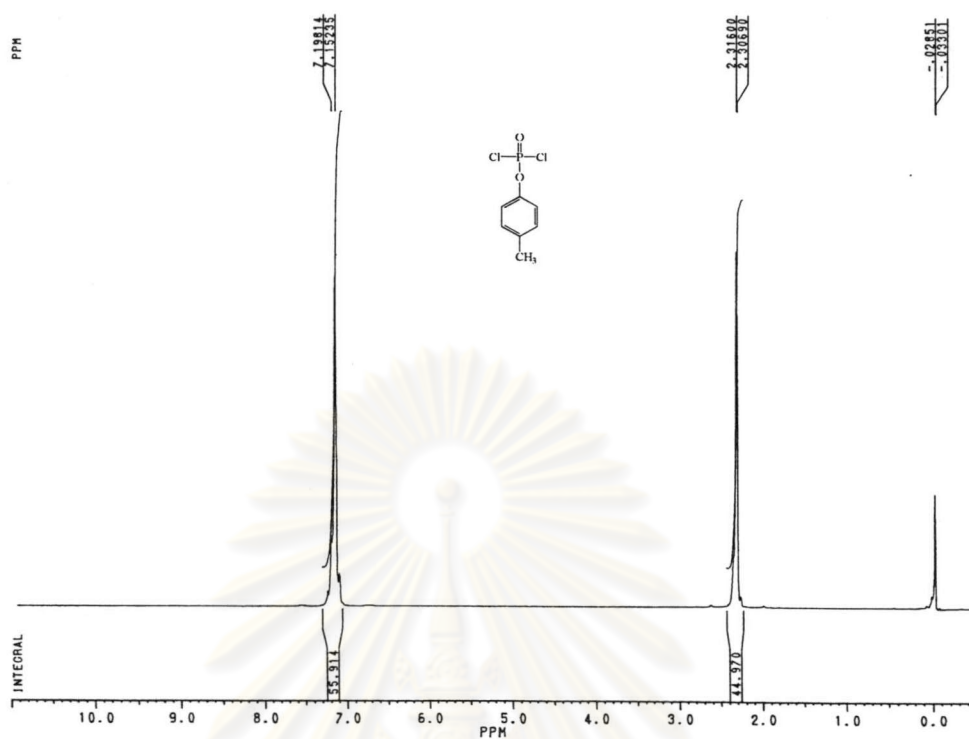


Fig 6A The  $^1\text{H-NMR}$  spectrum of monomer 17

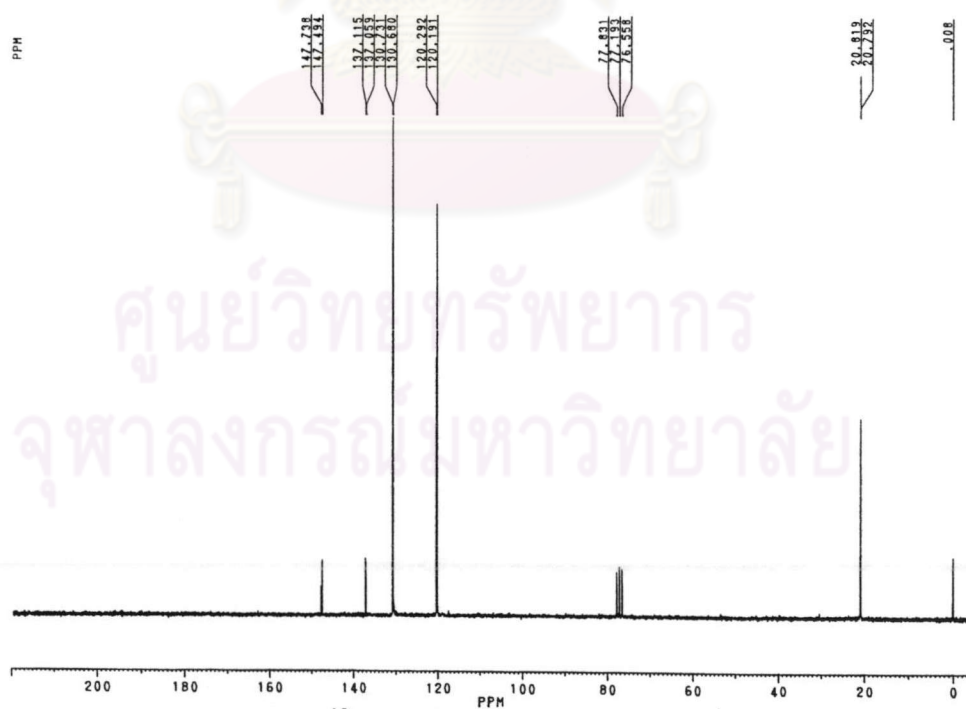


Fig 6B The  $^{13}\text{C-NMR}$  spectrum of monomer 17

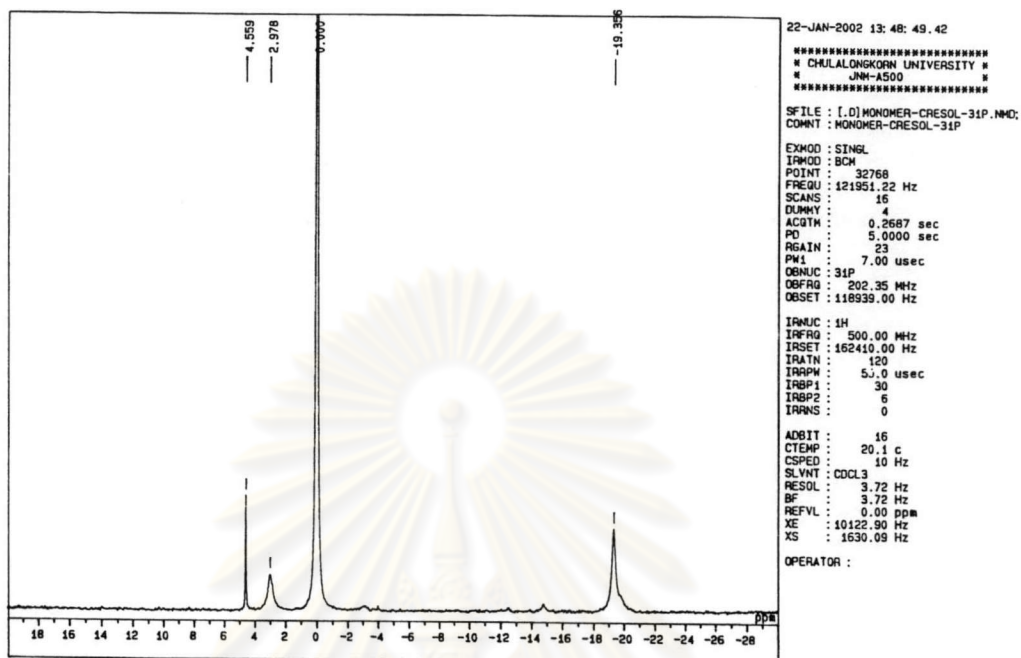


Fig 6C The  $^{31}\text{P}$ -NMR spectrum of monomer 17

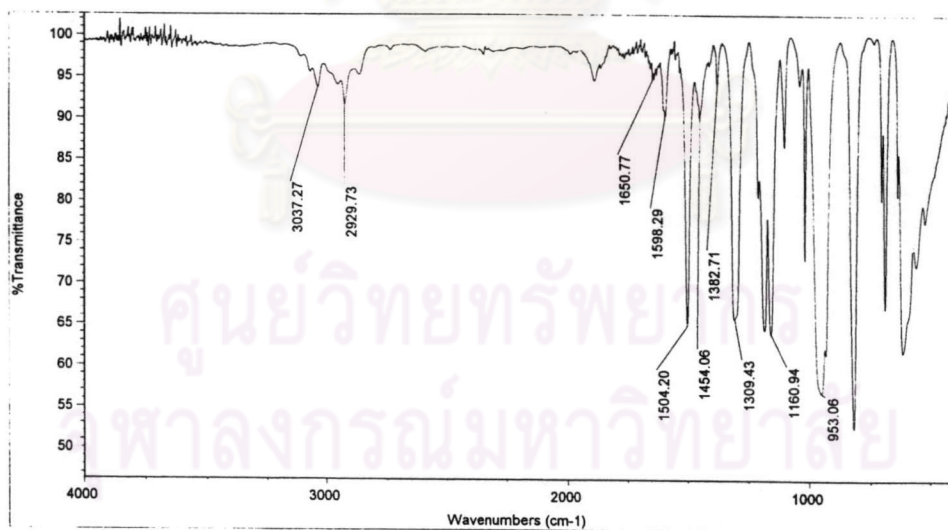


Fig 6D The IR spectra of monomer 17

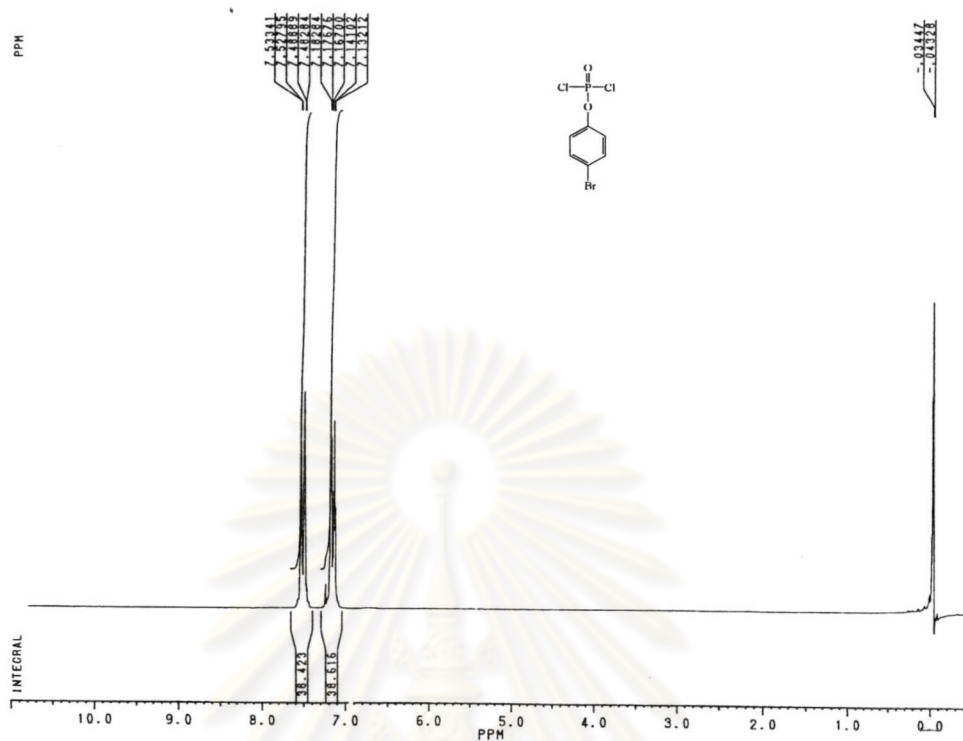


Fig 7A The  $^1\text{H-NMR}$  spectrum of monomer 18

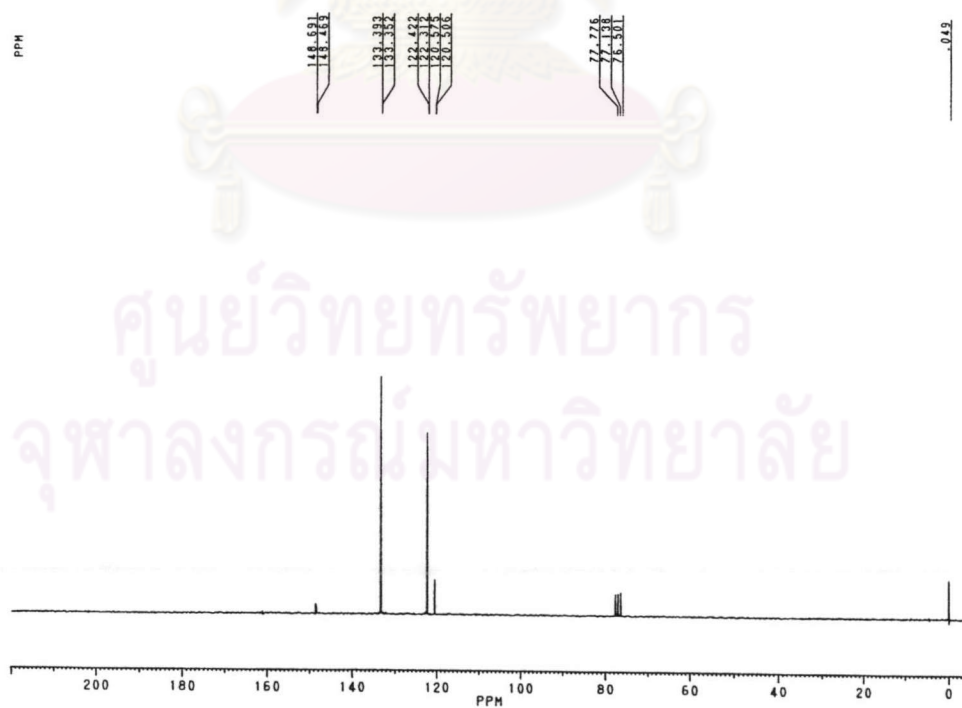


Fig 7B The  $^{13}\text{C-NMR}$  spectrum of monomer 18

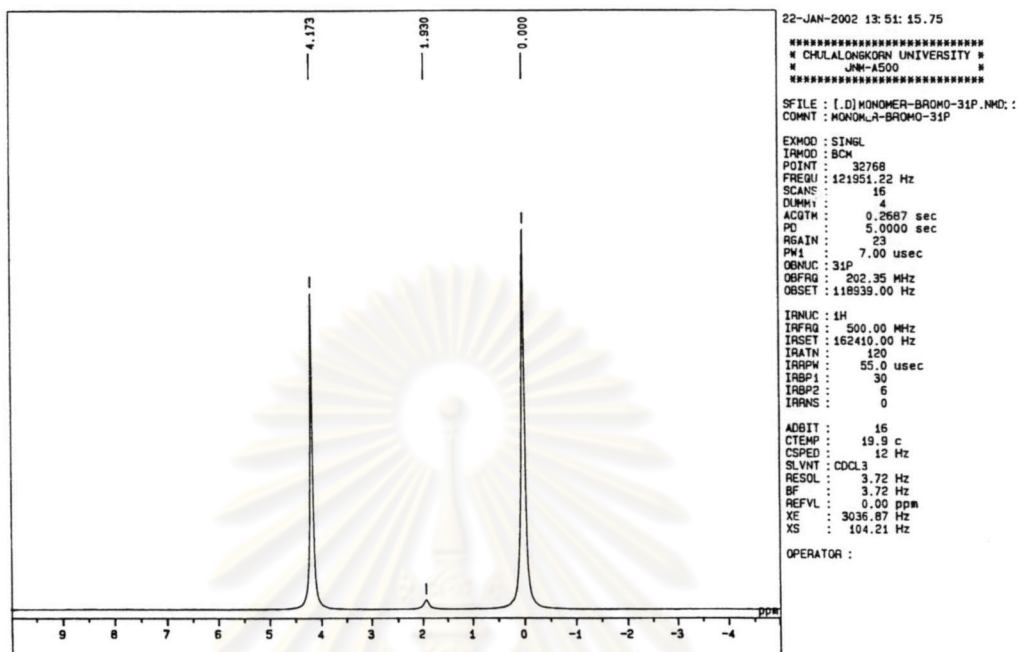


Fig 7C The  $^{31}\text{P}$ -NMR spectrum of monomer 18

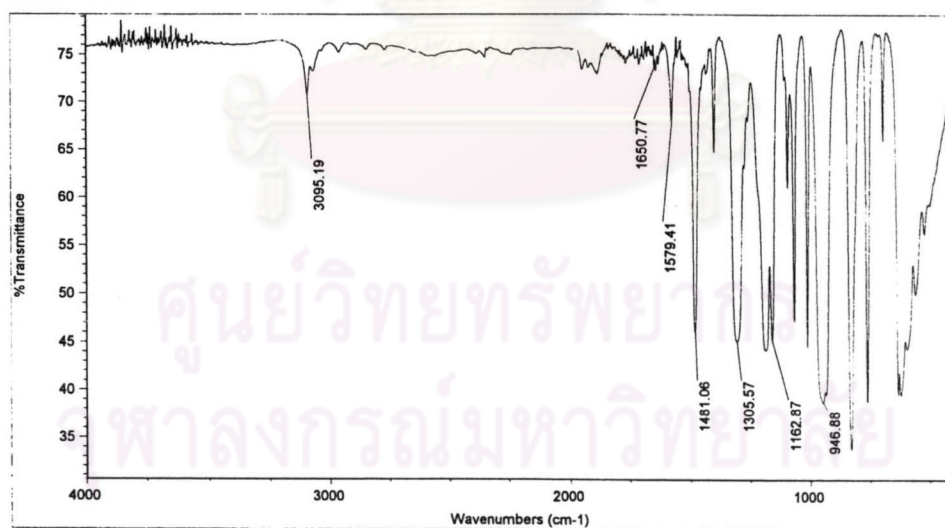


Fig 7D The IR spectrum of monomer 18

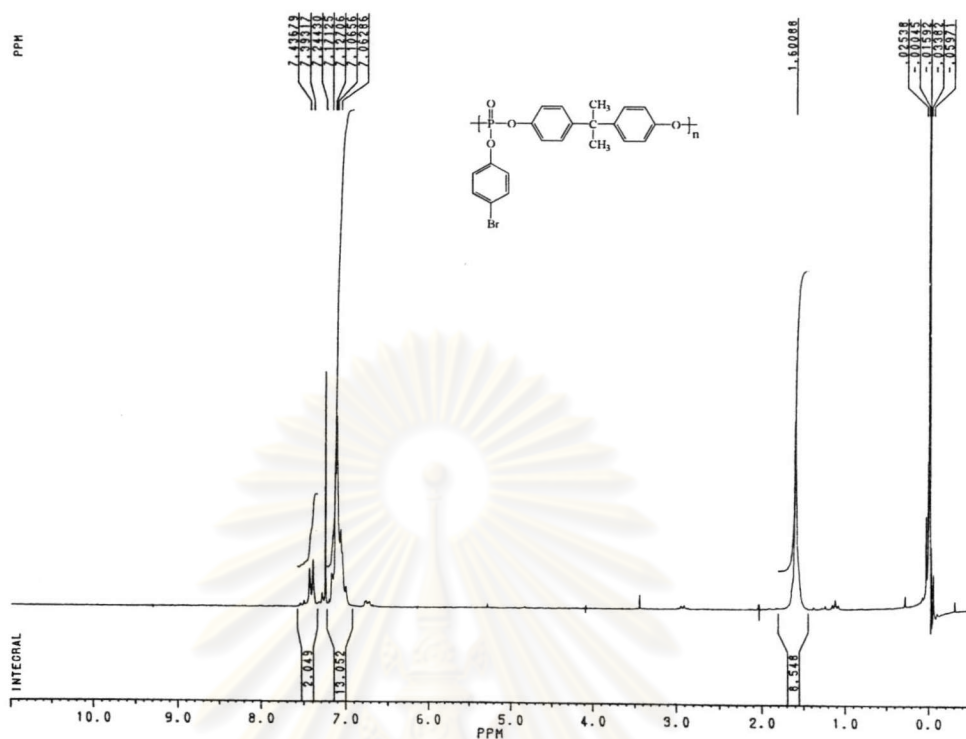


Fig 8A The  $^1\text{H-NMR}$  spectrum of polymer 19a

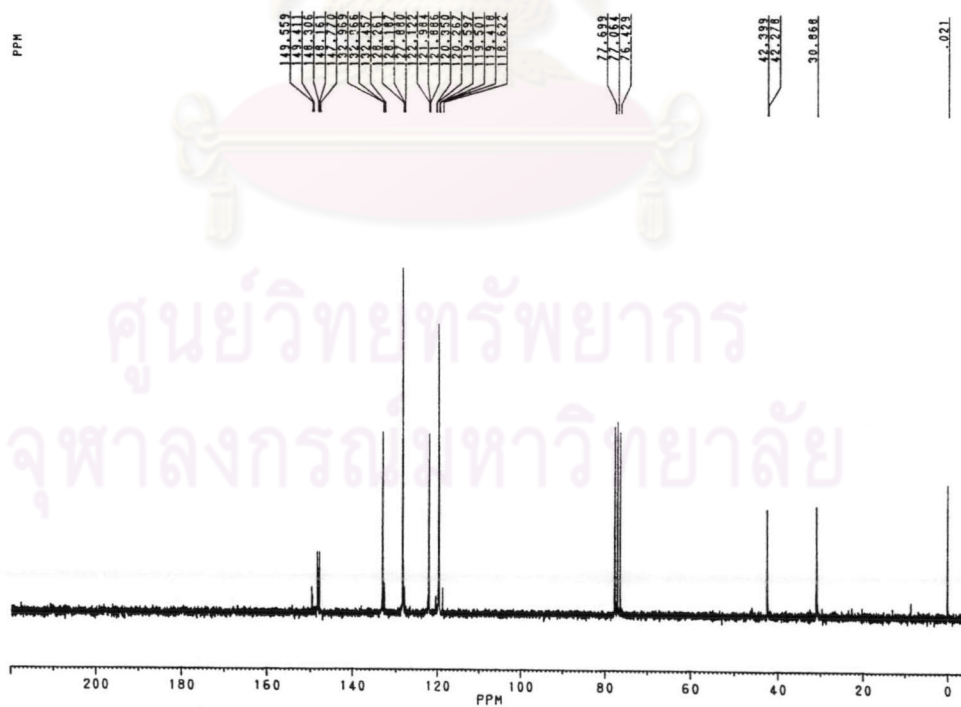


Fig 8B The  $^{13}\text{C-NMR}$  spectrum of polymer 19a



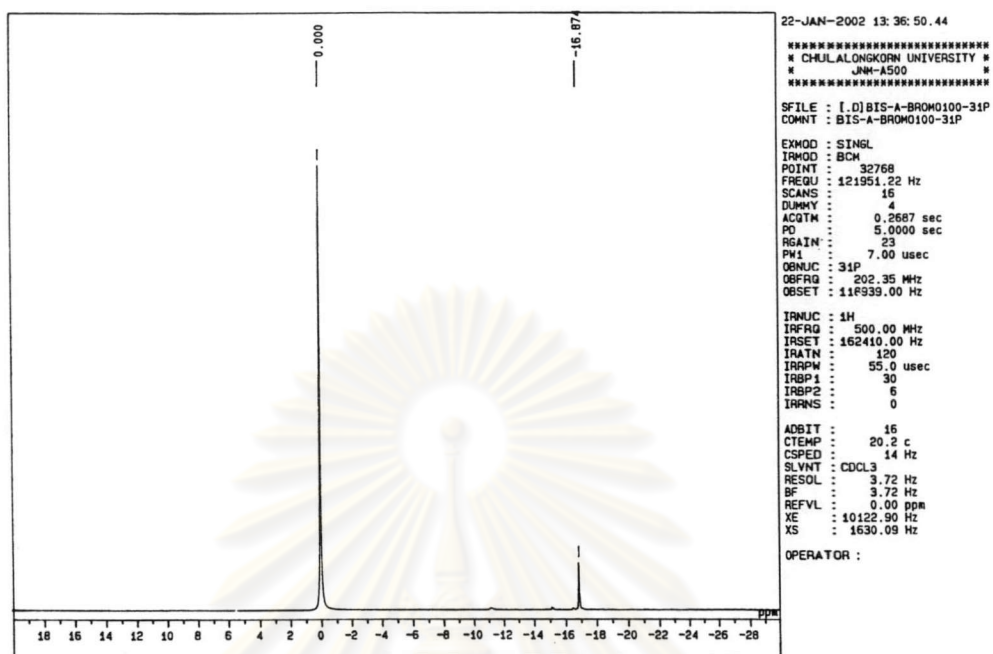


Fig 8C The  $^{31}\text{P}$ -NMR spectrum of polymer 19a

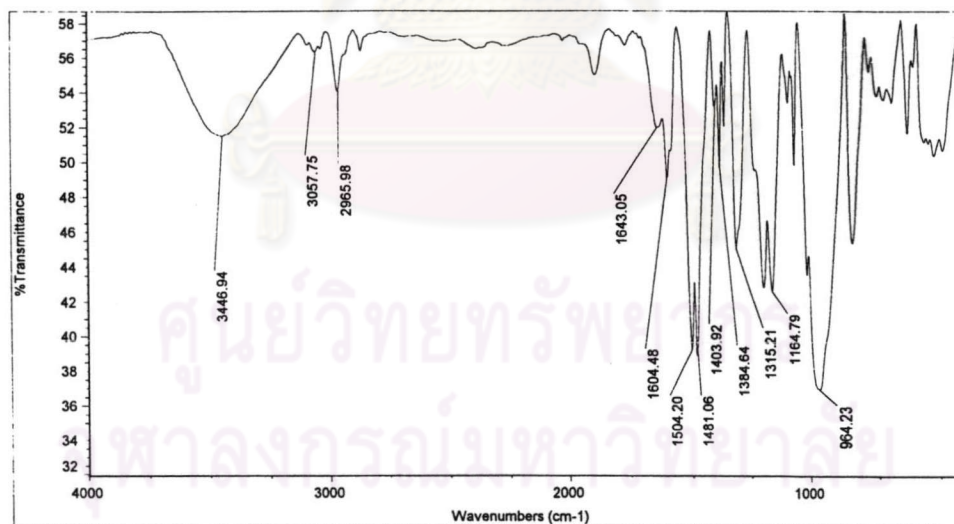


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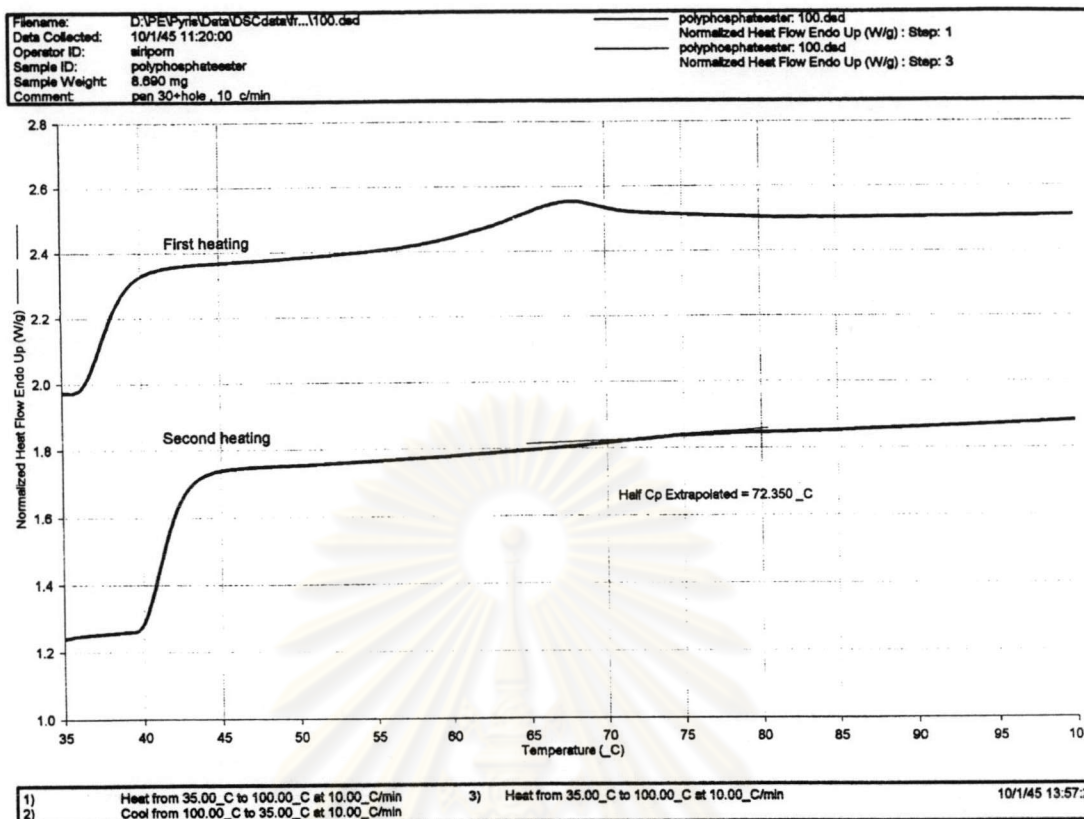


Fig 8E The DSC thermogram of polymer 19a

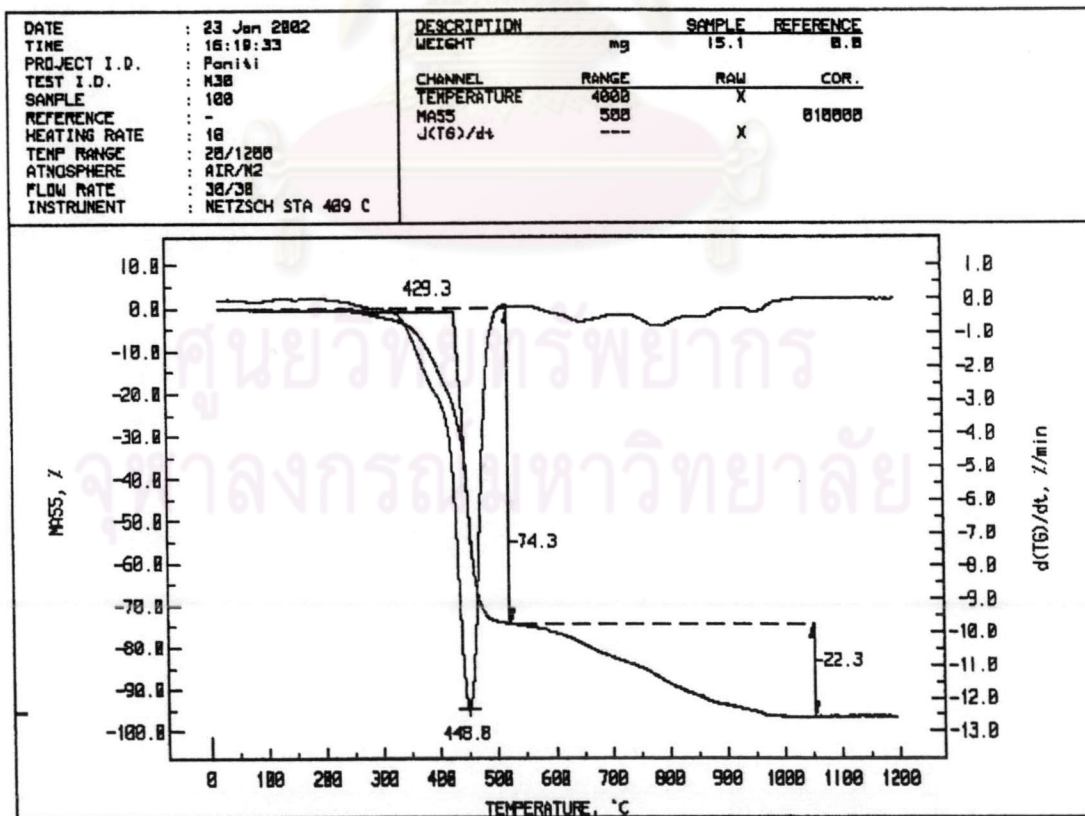


Fig 8F The TGA thermogram of polymer 19a



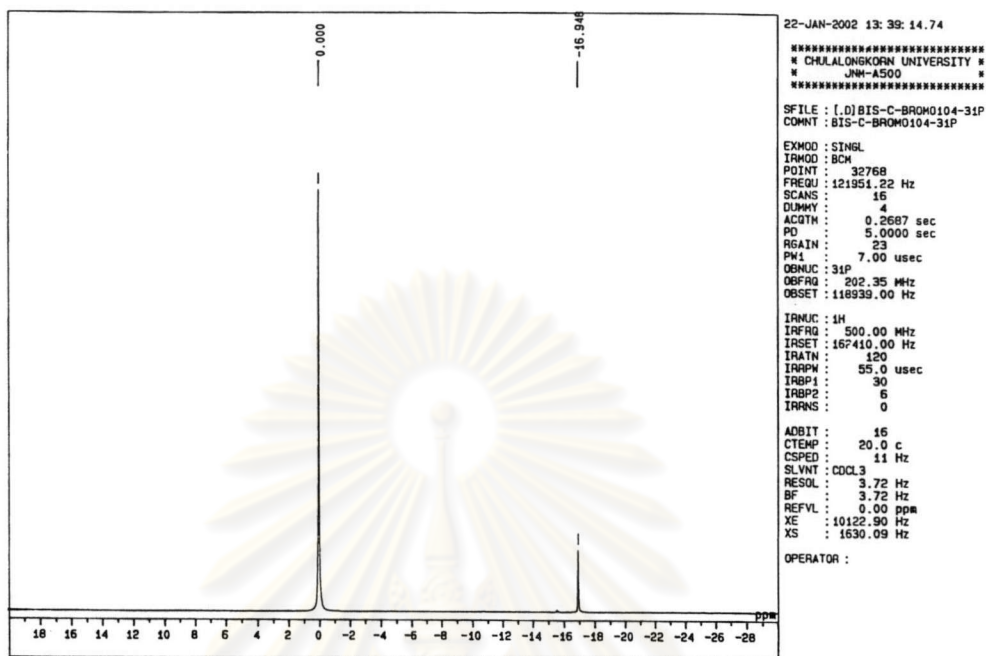


Fig 9C The  $^{31}\text{P}$ -NMR spectrum of polymer 19b

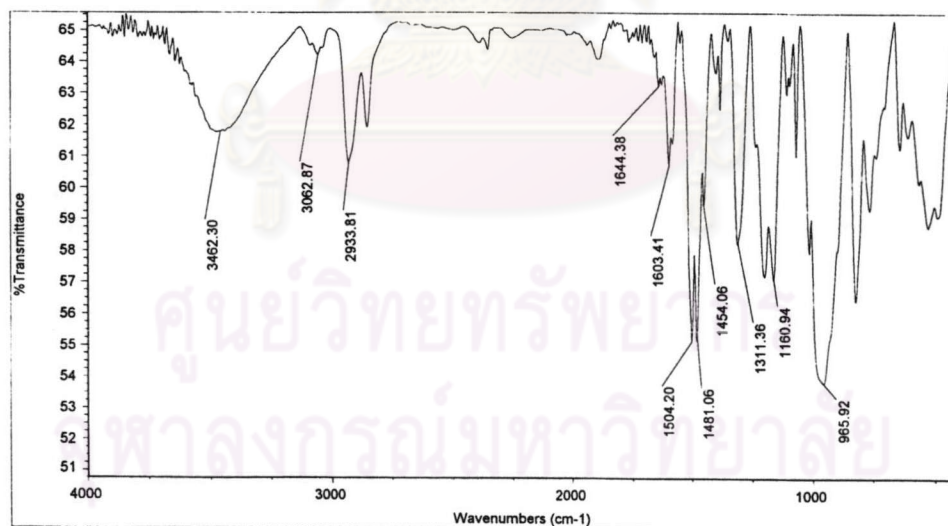


Fig 9D The IR spectrum of polymer 19b

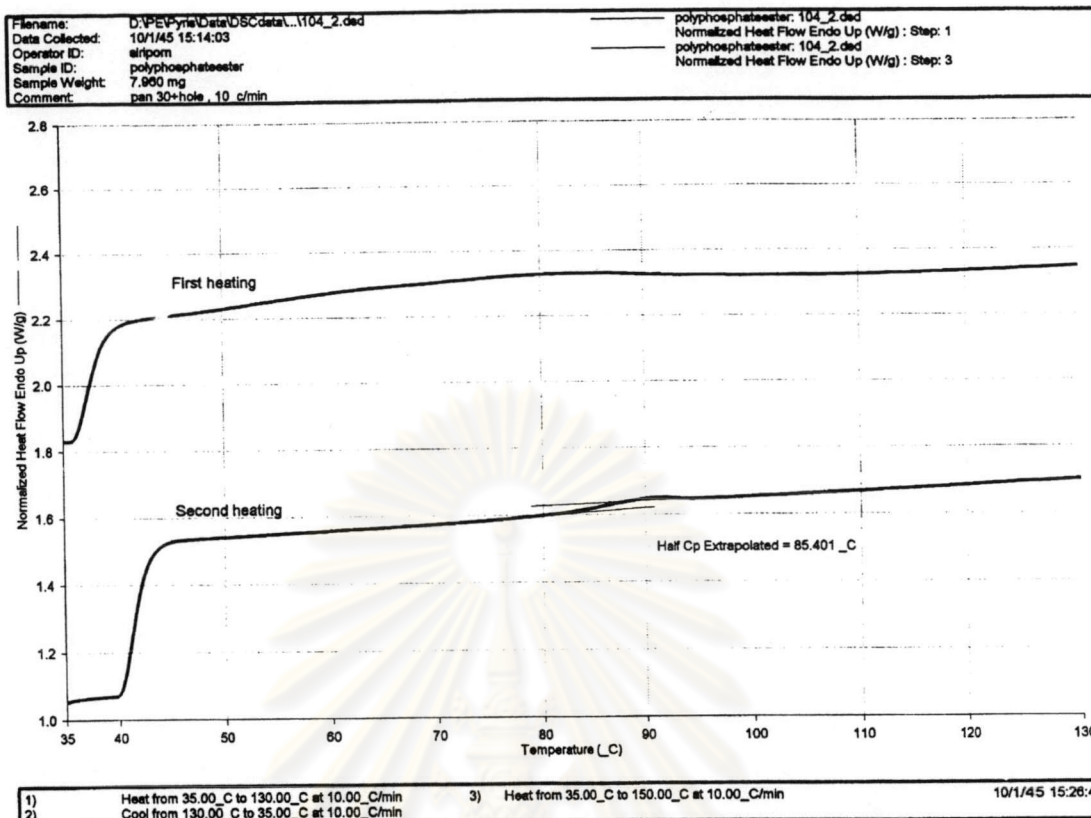


Fig 9E The DSC thermogram of polymer 19b

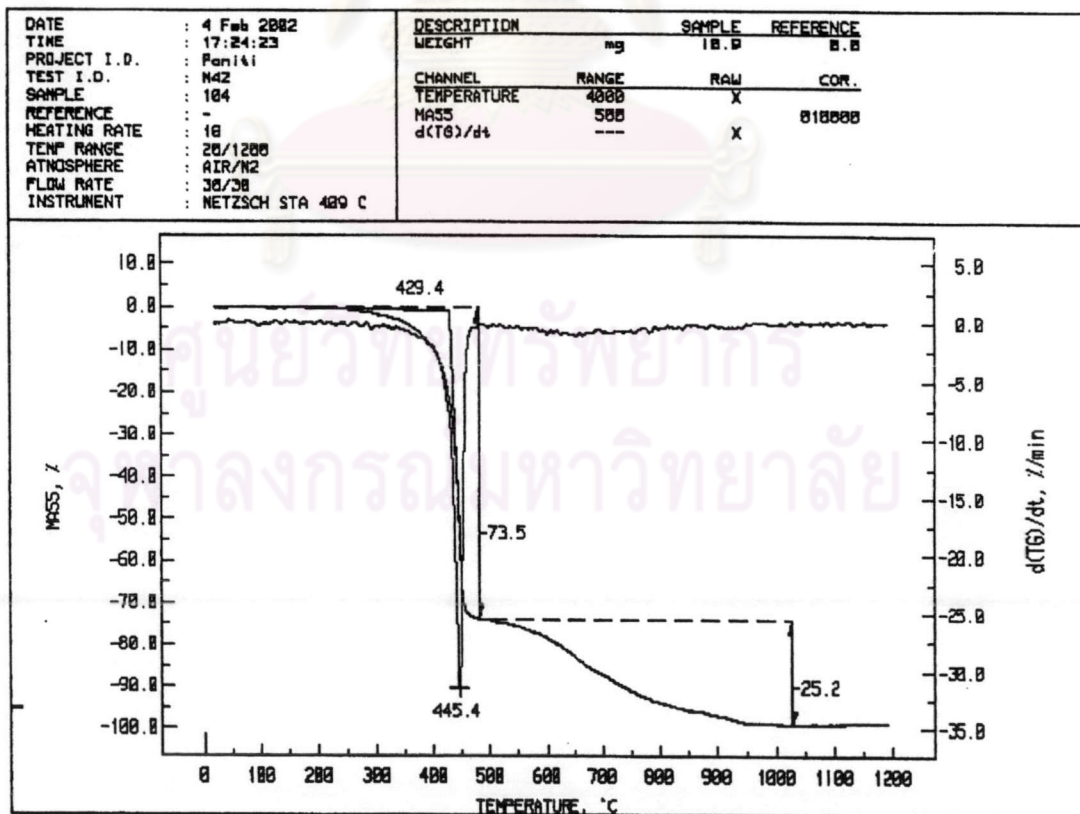


Fig 9F The TGA thermogram of polymer 19b

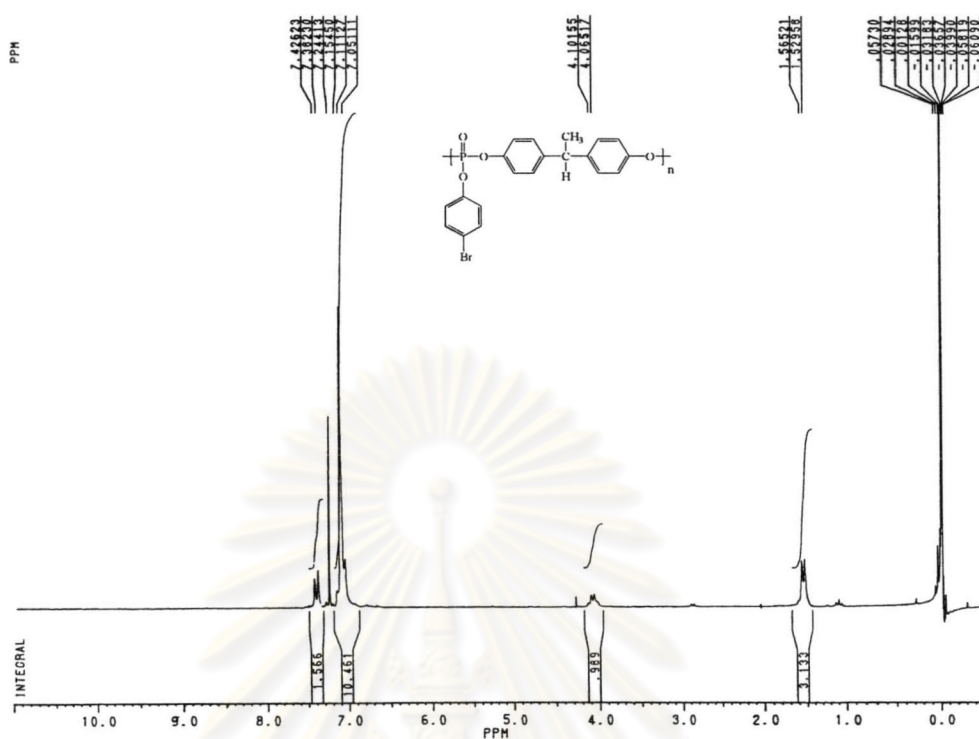


Fig 10A The  $^1\text{H}$ -NMR spectrum of polymer 19c

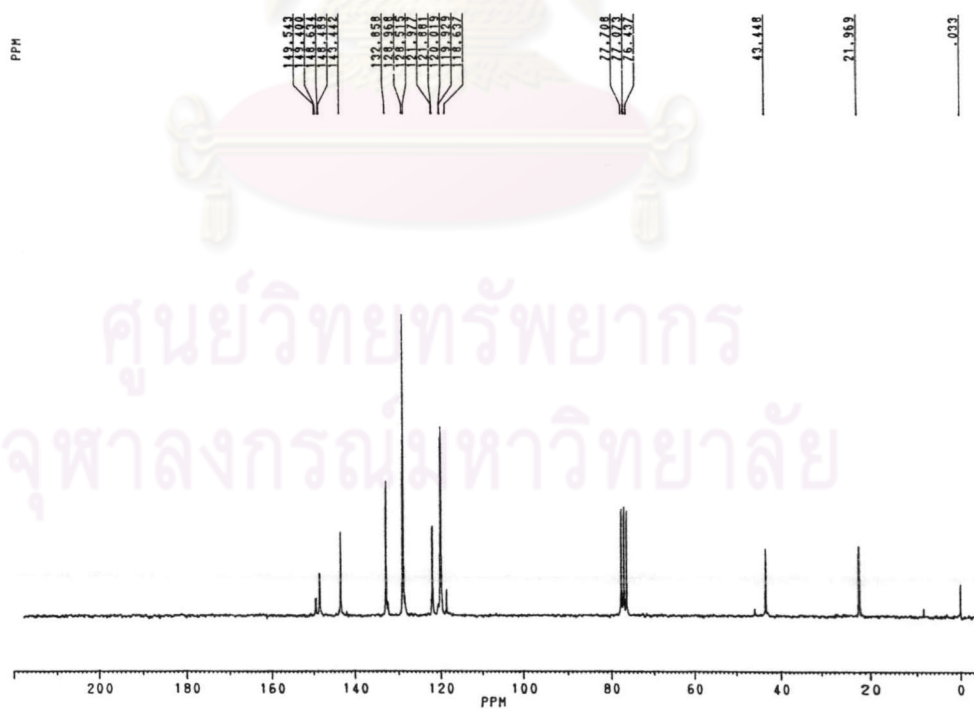


Fig 10B The  $^{13}\text{C}$ -NMR spectrum of polymer 19c

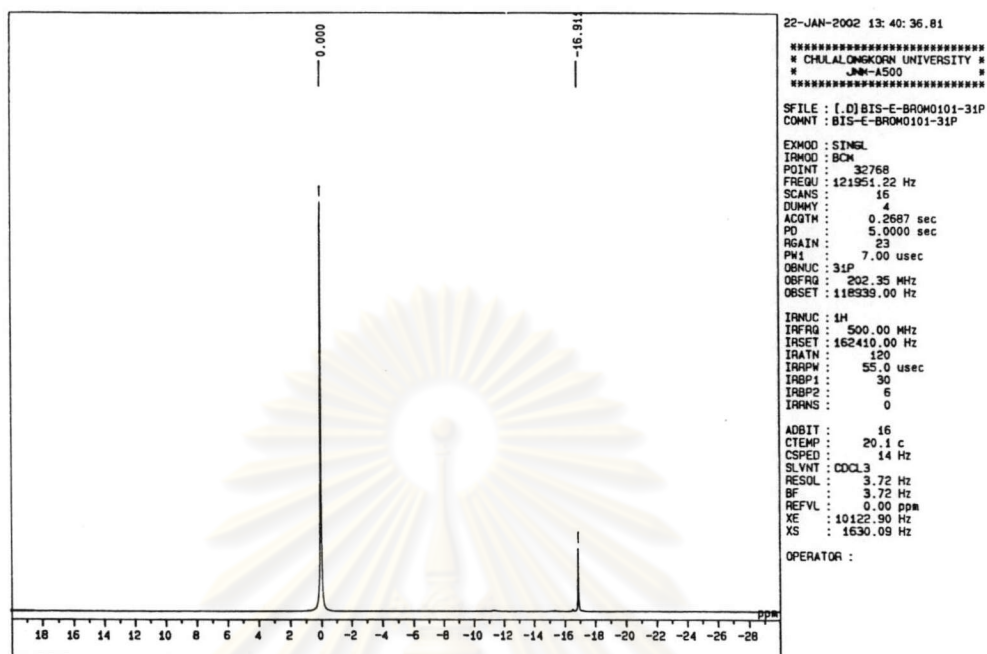


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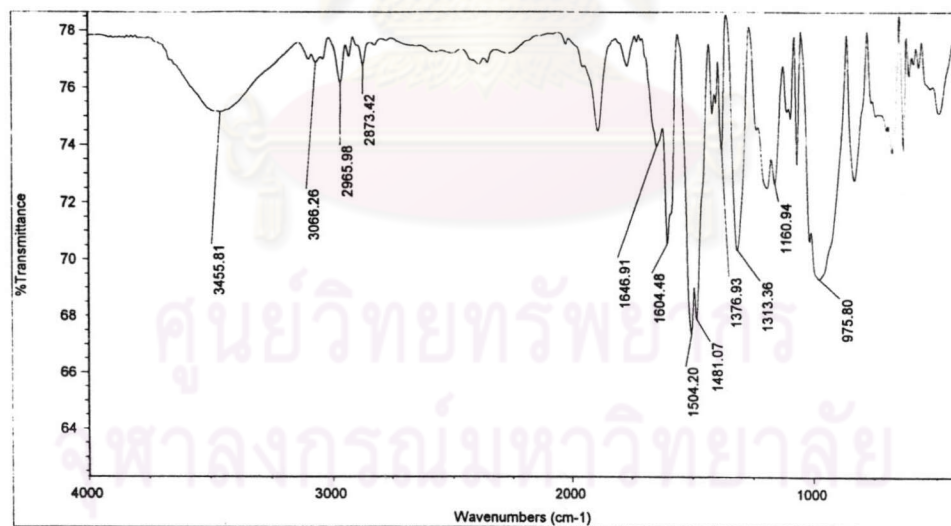


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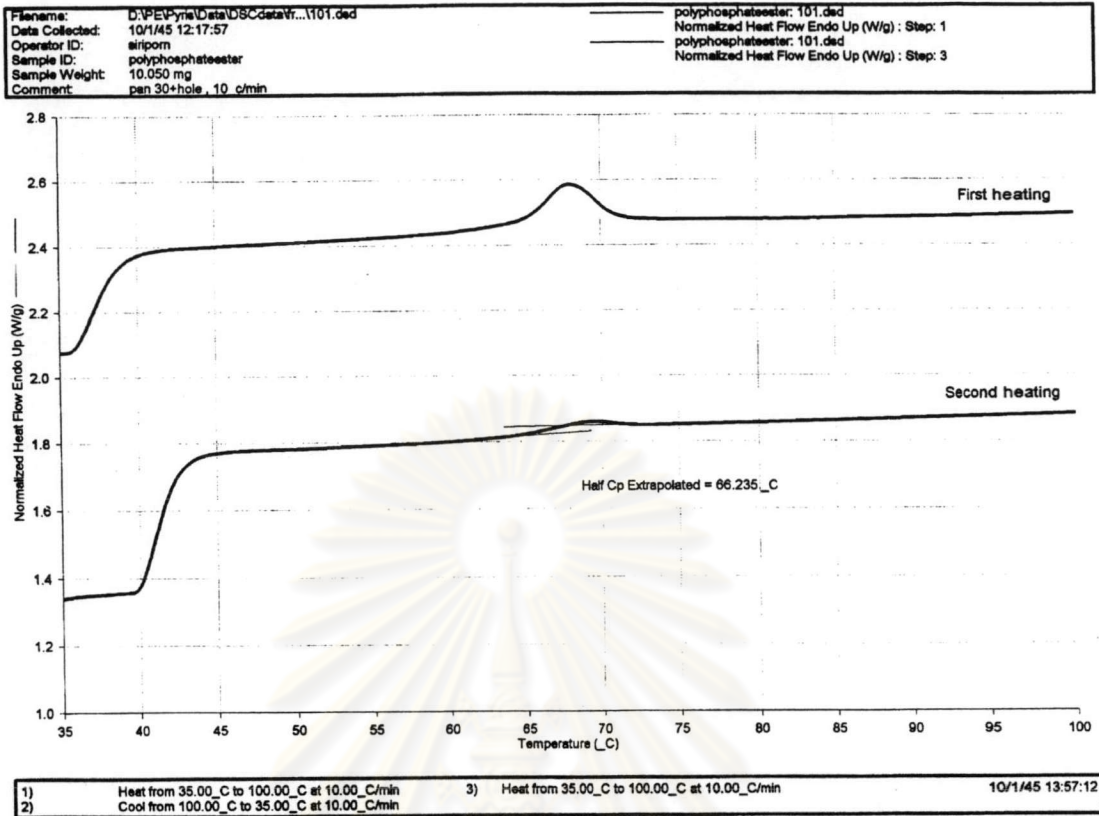


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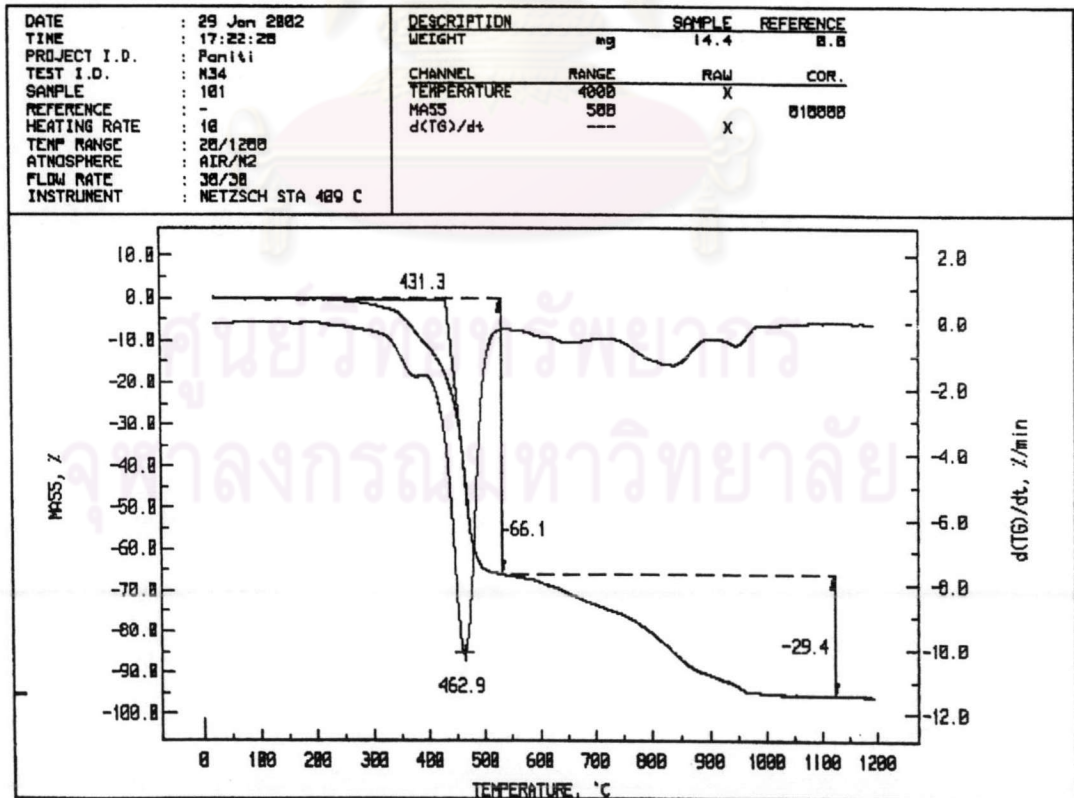


Fig 10F The TGA thermogram of polymer 19c



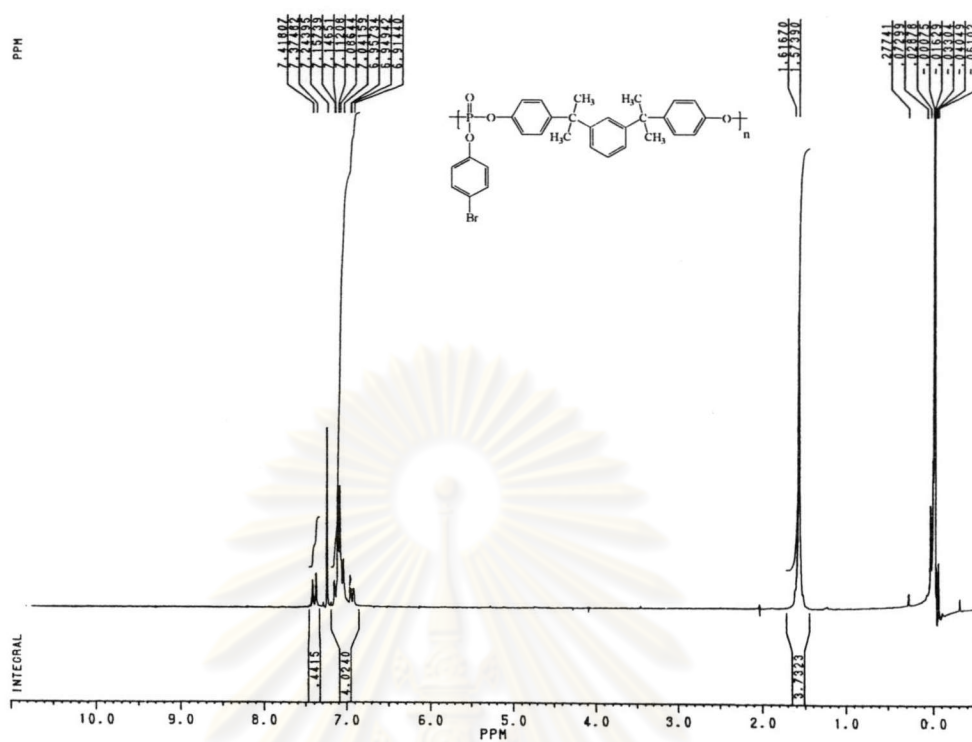
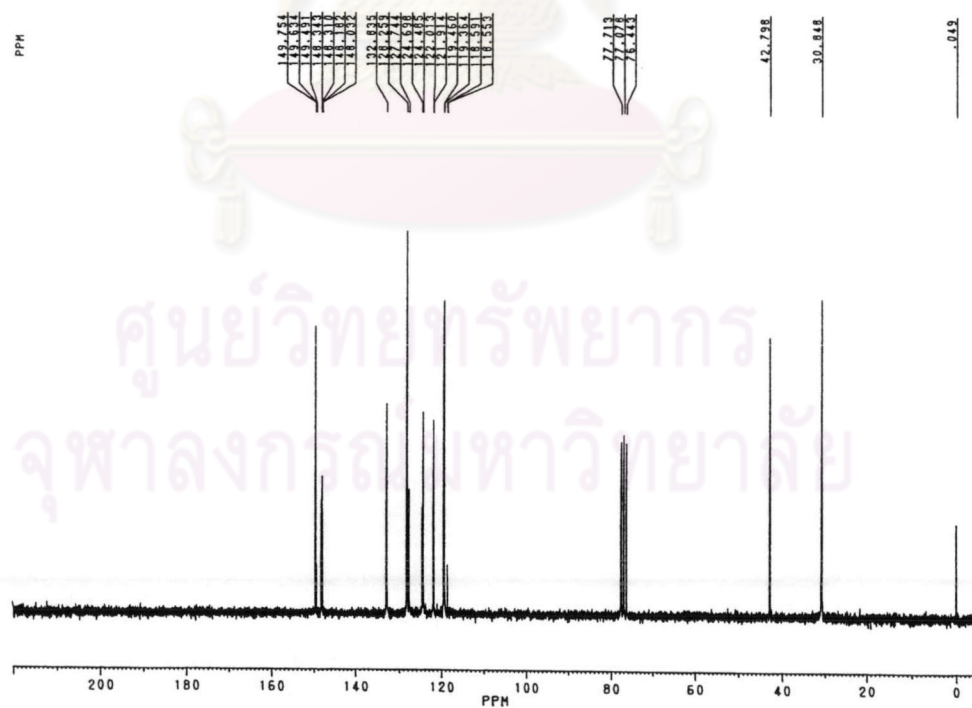


Fig 11A The  $^1\text{H-NMR}$  spectrum of polymer 19d



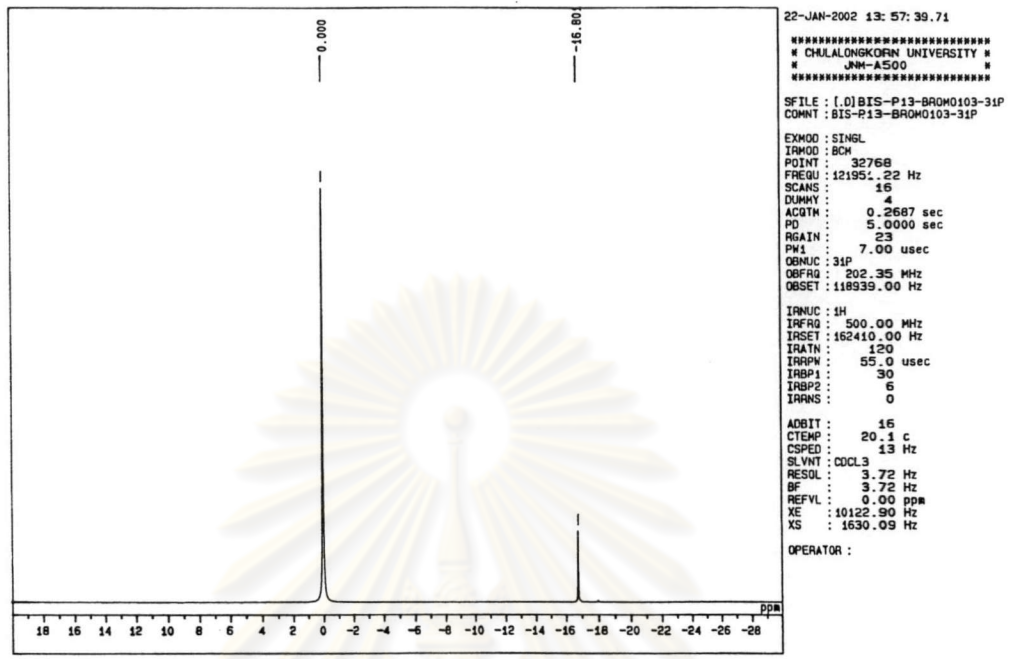


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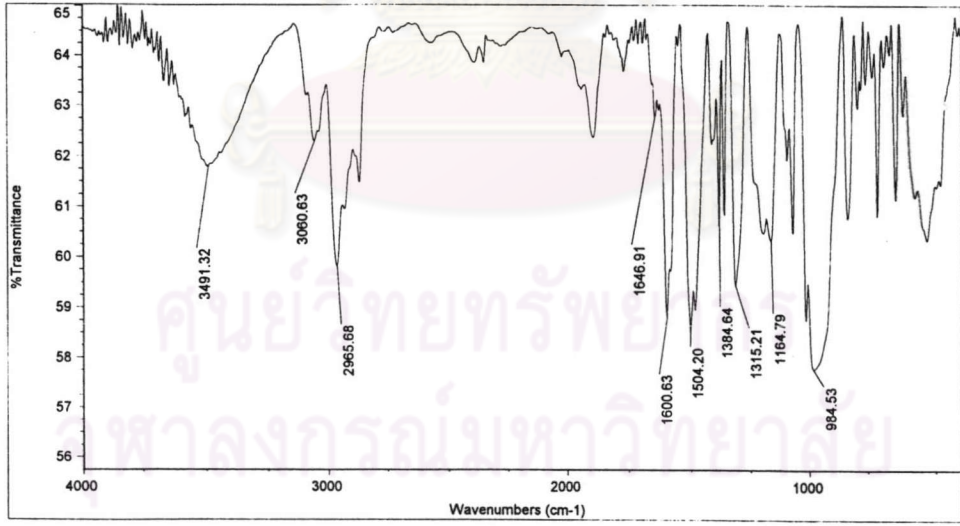


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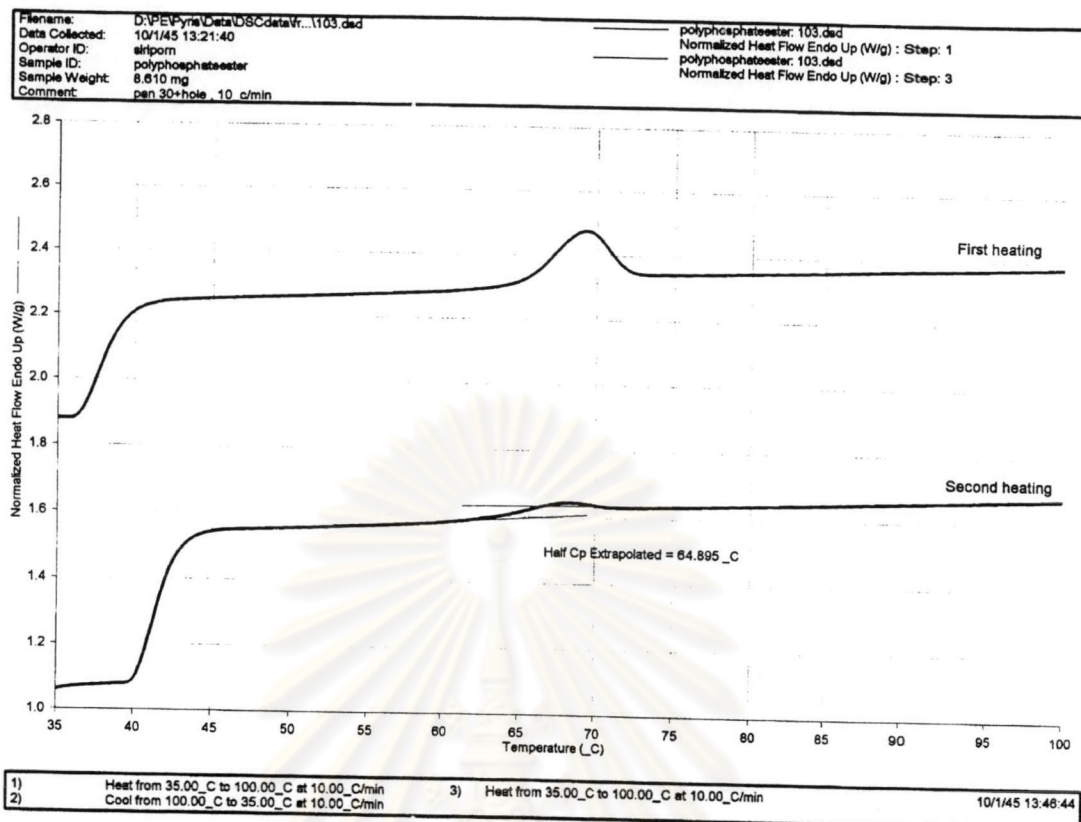


Fig 11E The DSC thermogram of polymer 19d

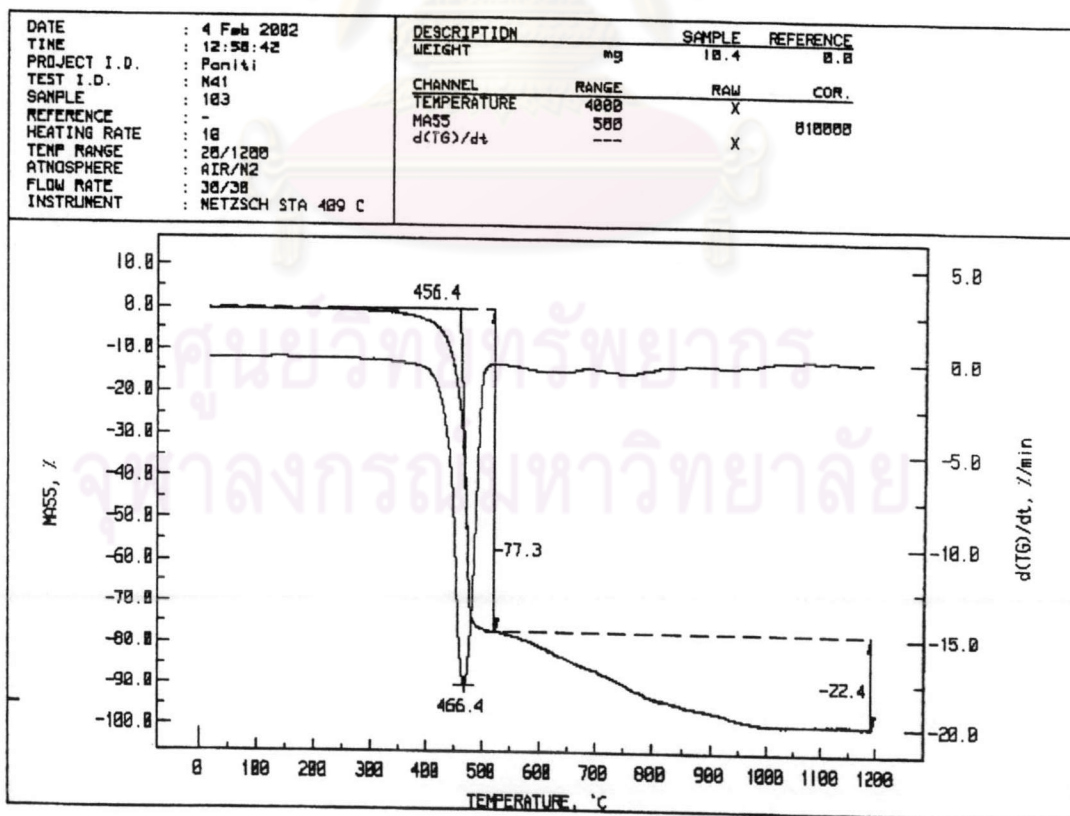


Fig 11F The TGA thermogram of polymer 19d

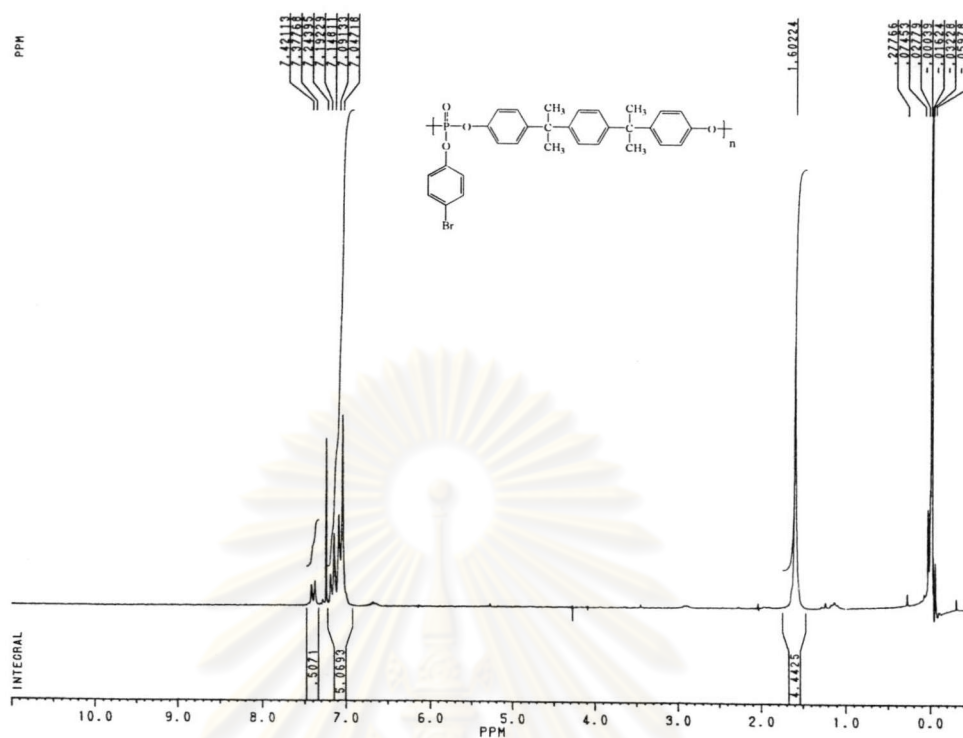


Fig 12A The  $^1\text{H-NMR}$  spectrum of polymer 19e

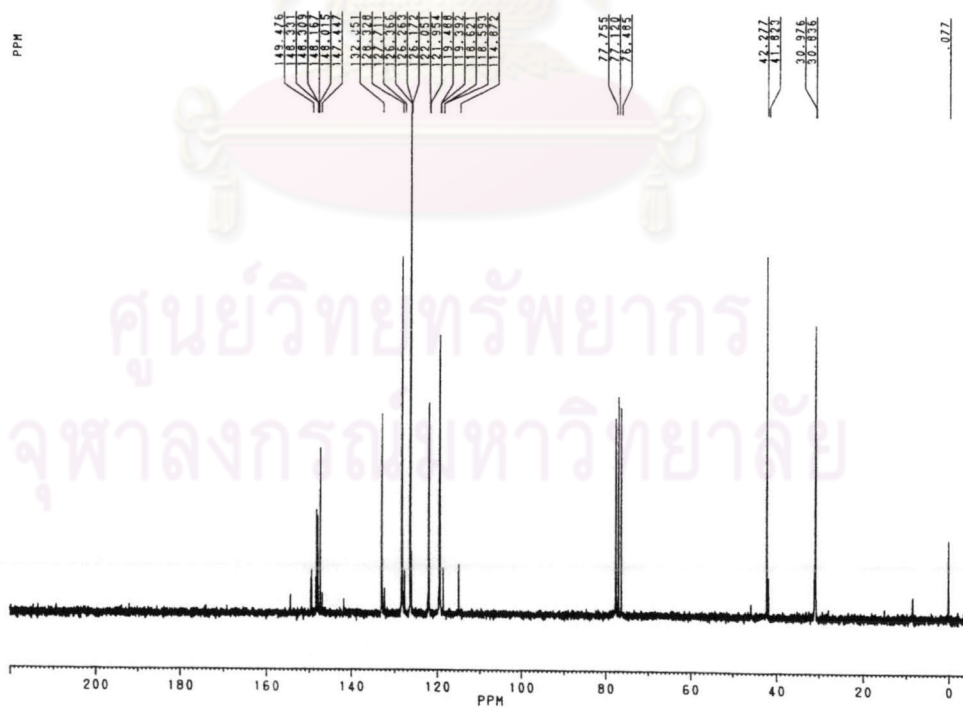


Fig 12B The  $^{13}\text{C-NMR}$  spectrum of polymer 19e

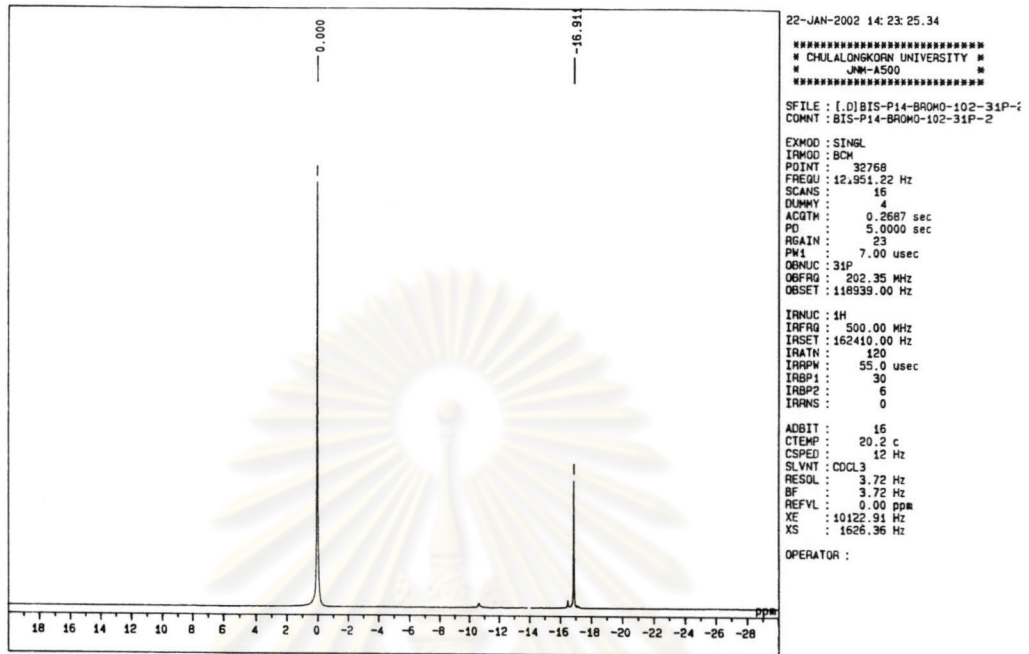


Fig 12C The  $^{31}\text{P}$ -NMR spectrum of polymer 19e

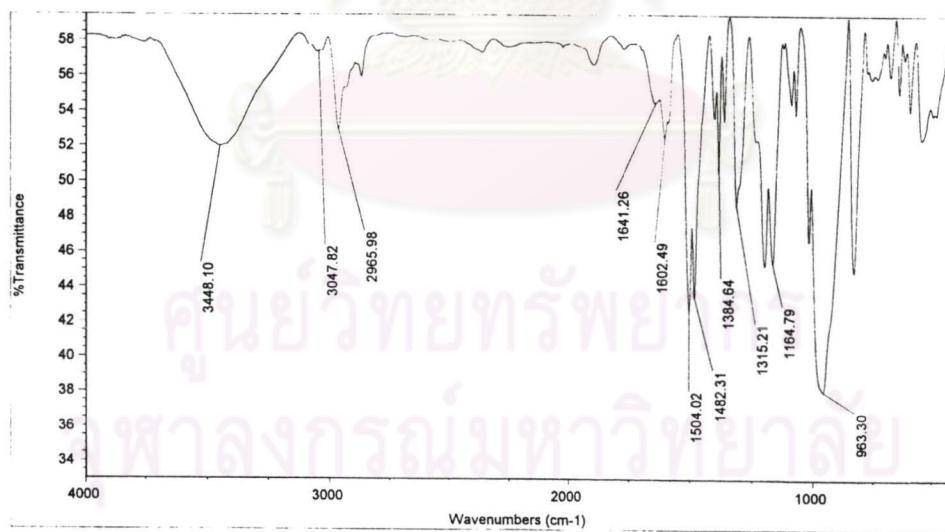


Fig 12D The IR spectrum of polymer 19e

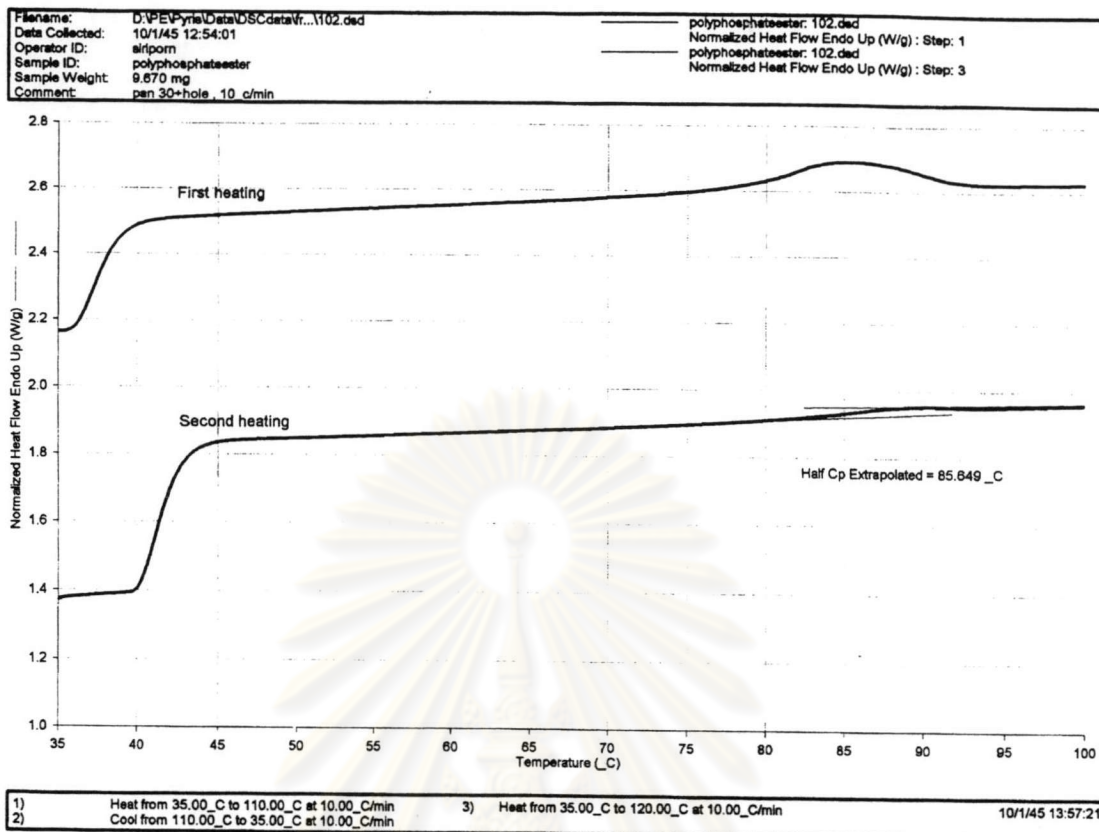


Fig 12E The DSC thermogram of polymer 19e

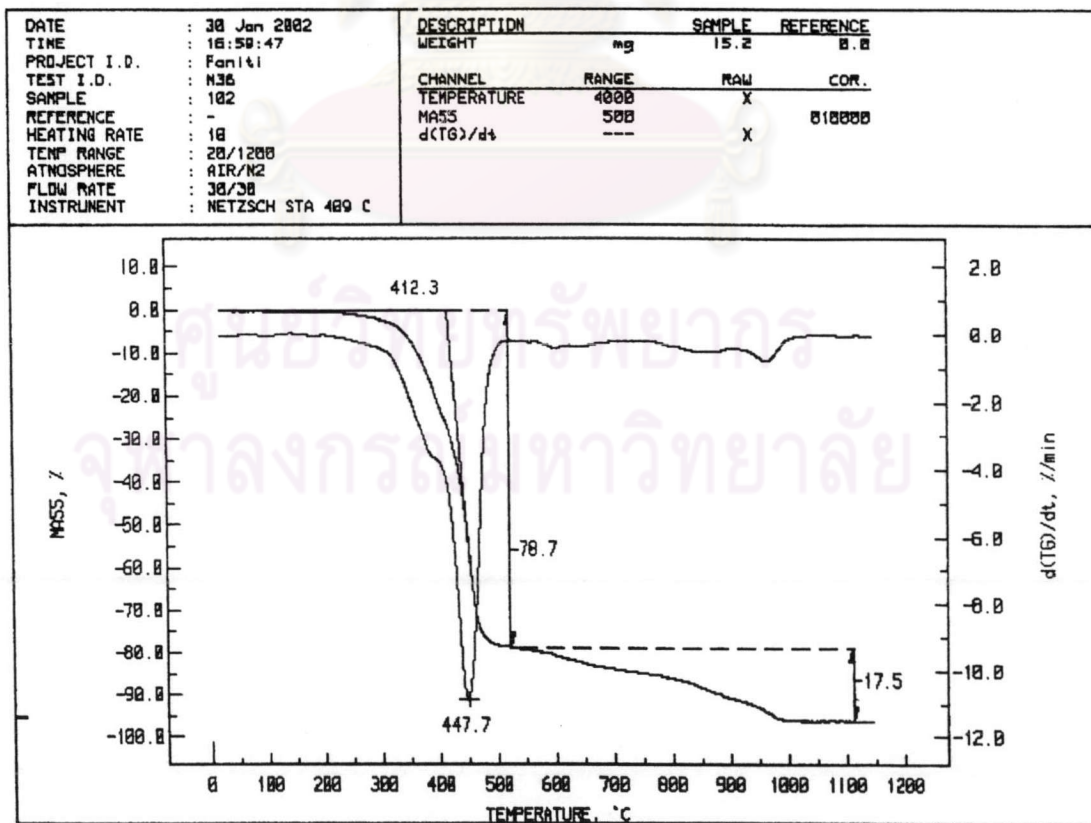
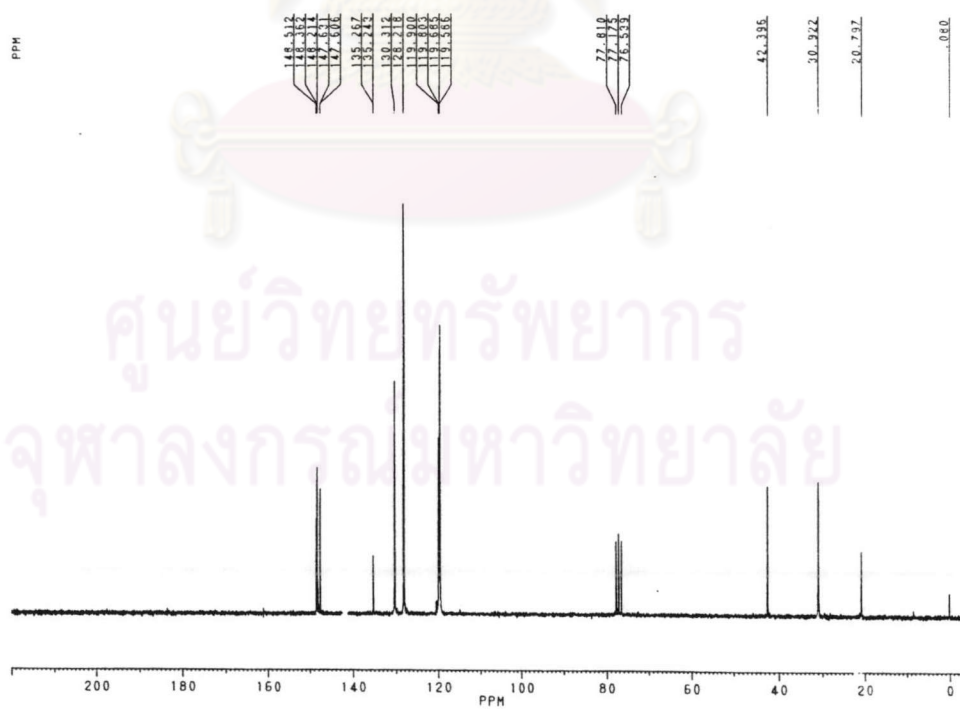
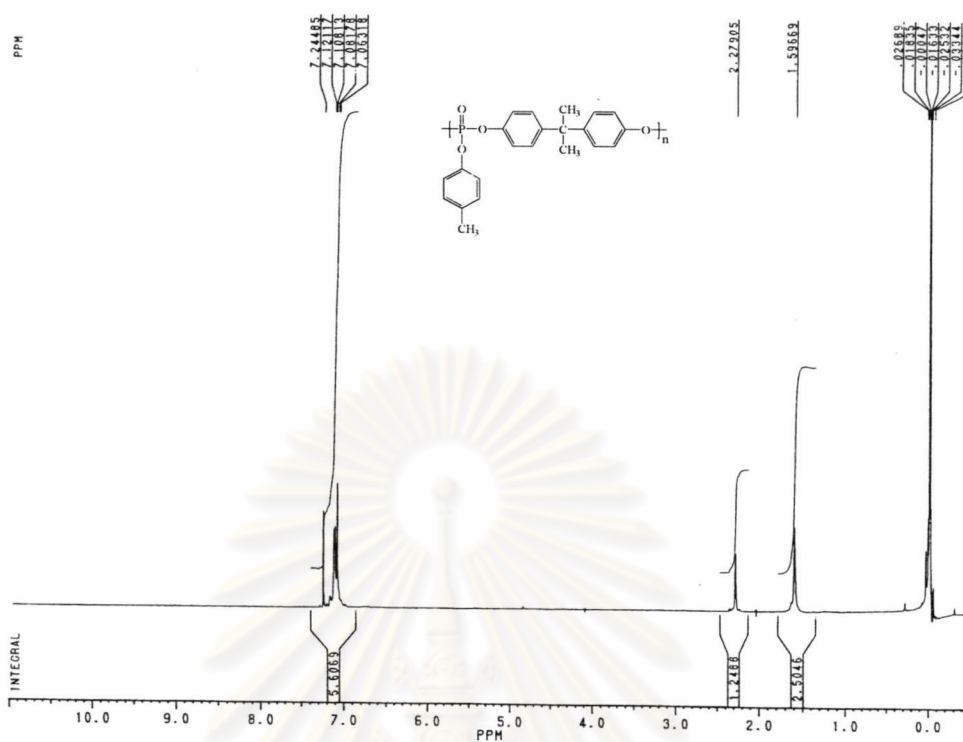


Fig 12F The TGA thermogram of polymer 19e



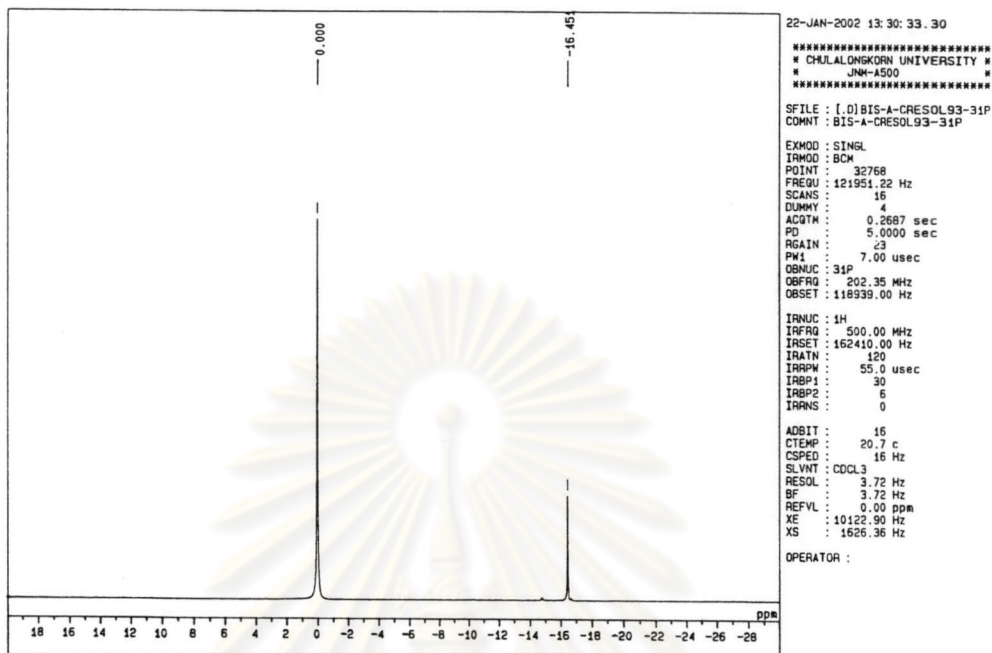


Fig 13C The  $^{31}\text{P}$ -NMR spectrum of polymer 20a

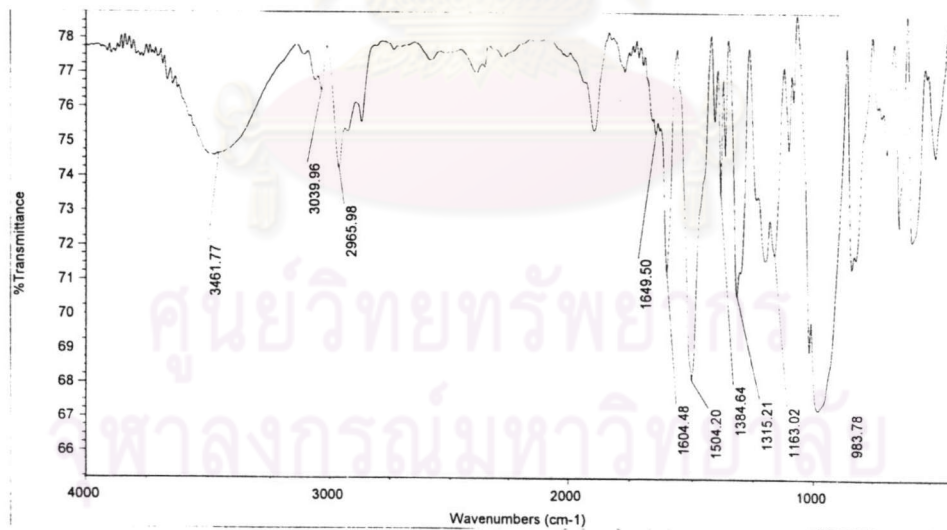


Fig 13D The IR spectrum of polymer 20a



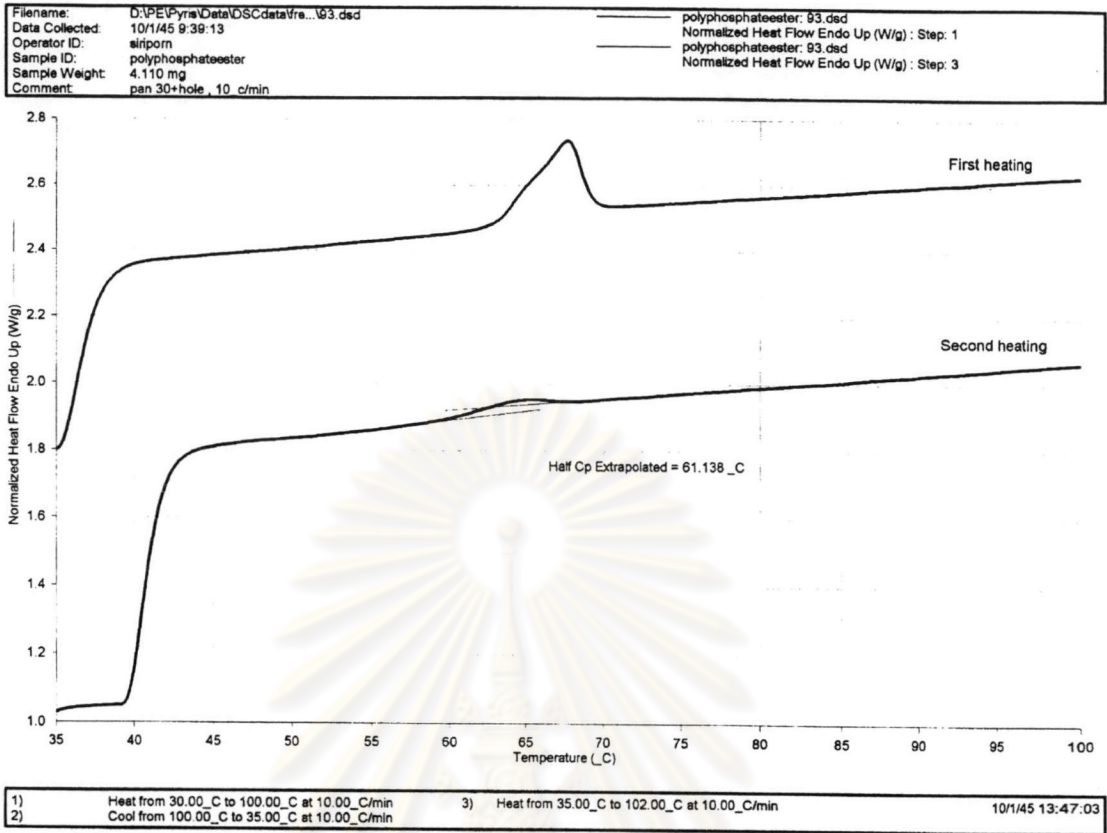


Fig 13E The DSC thermogram of polymer 20a

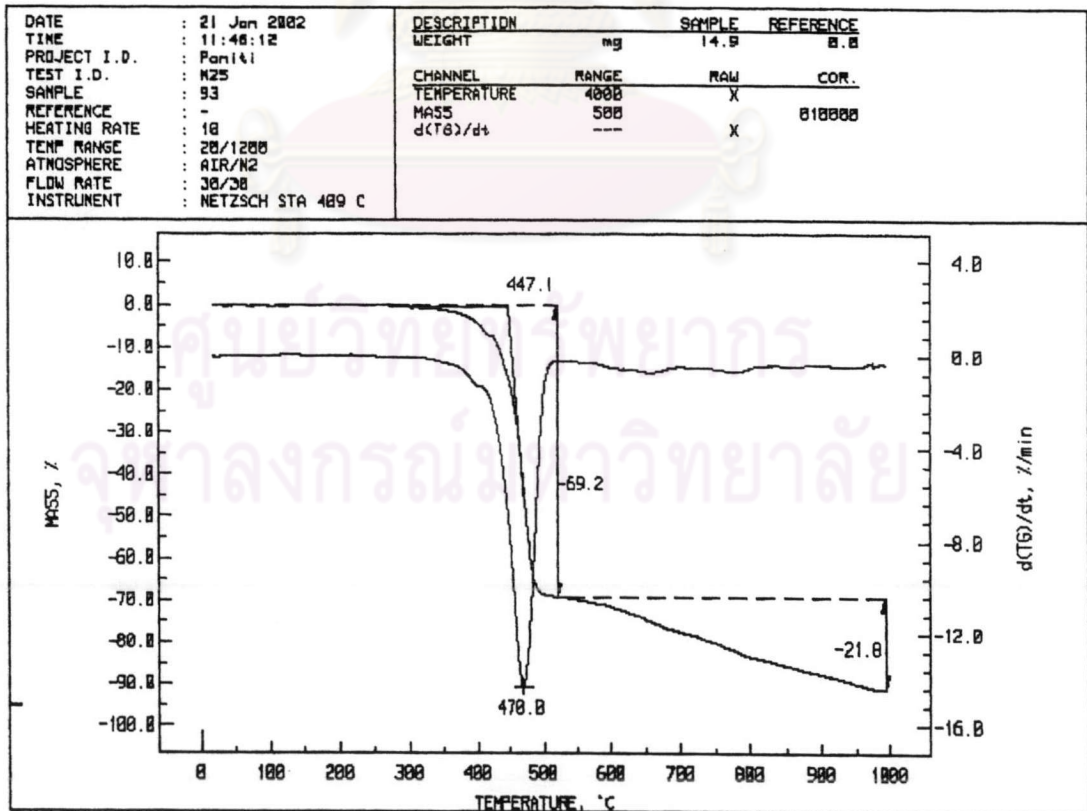


Fig 13F The TGA thermogram of polymer 20a

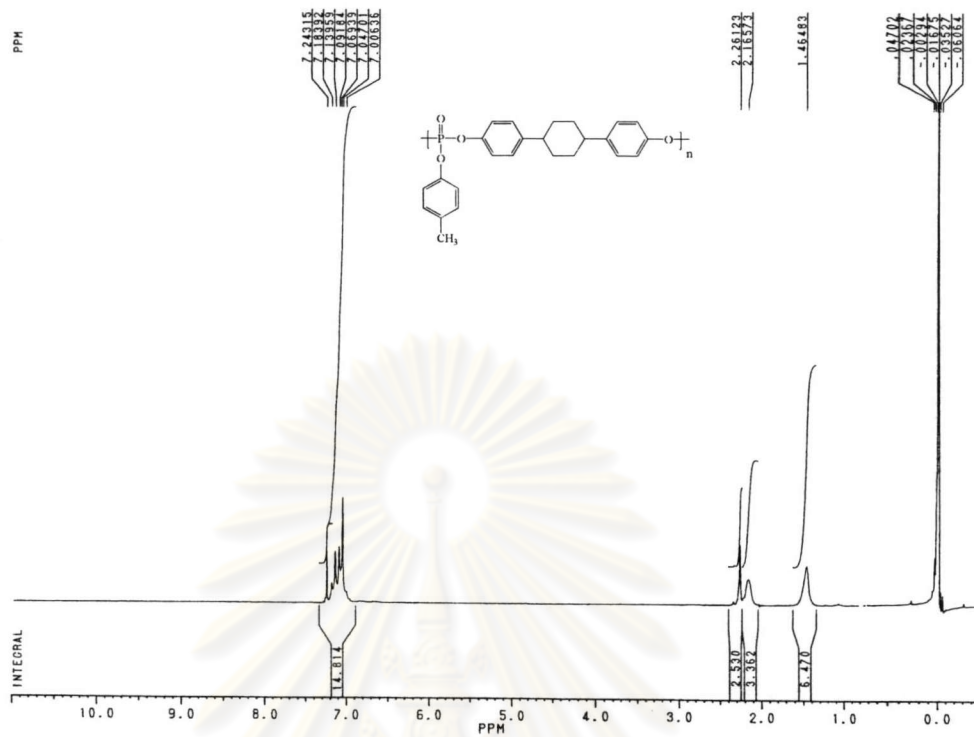


Fig 14A The  $^1\text{H}$ -NMR spectrum of polymer 20b

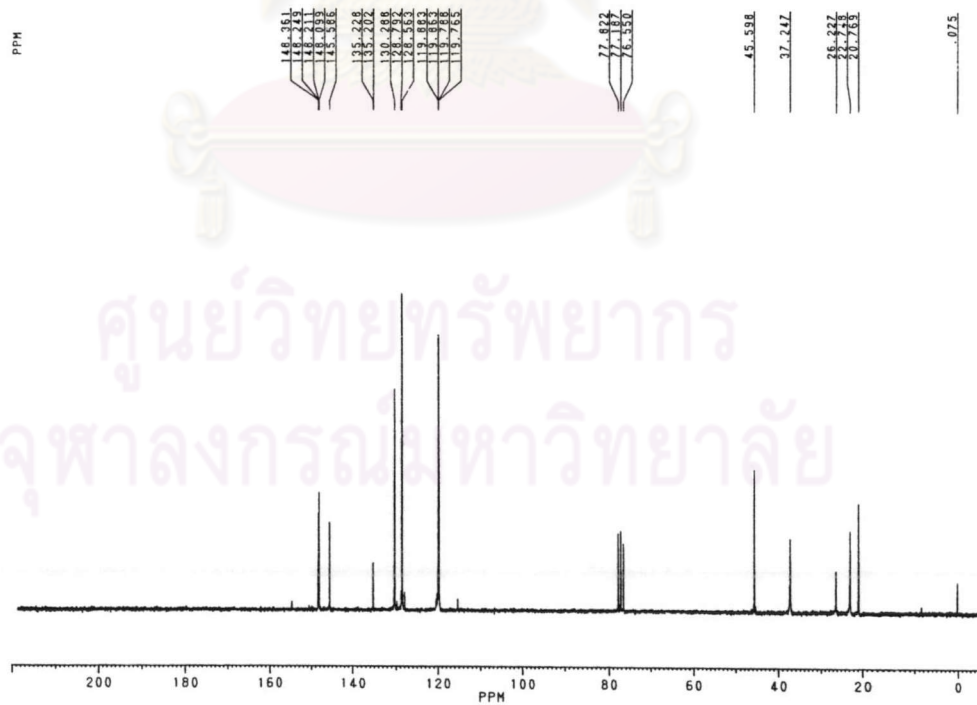


Fig 14B The  $^{13}\text{C}$ -NMR spectrum of polymer 20b

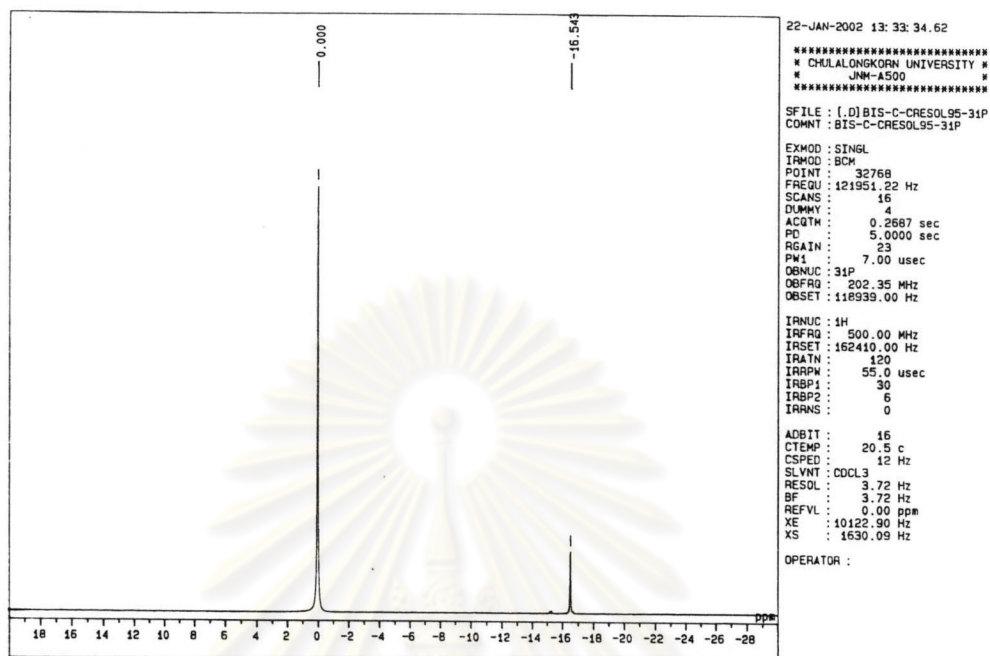


Fig 14C The  $^{31}\text{P}$ -NMR spectrum of polymer 20b

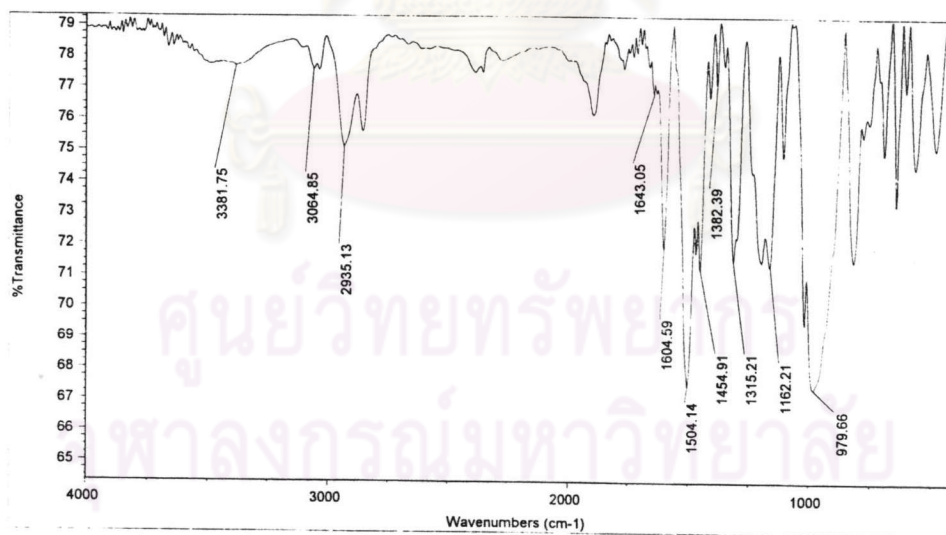


Fig 14D The IR spectrum of polymer 20b

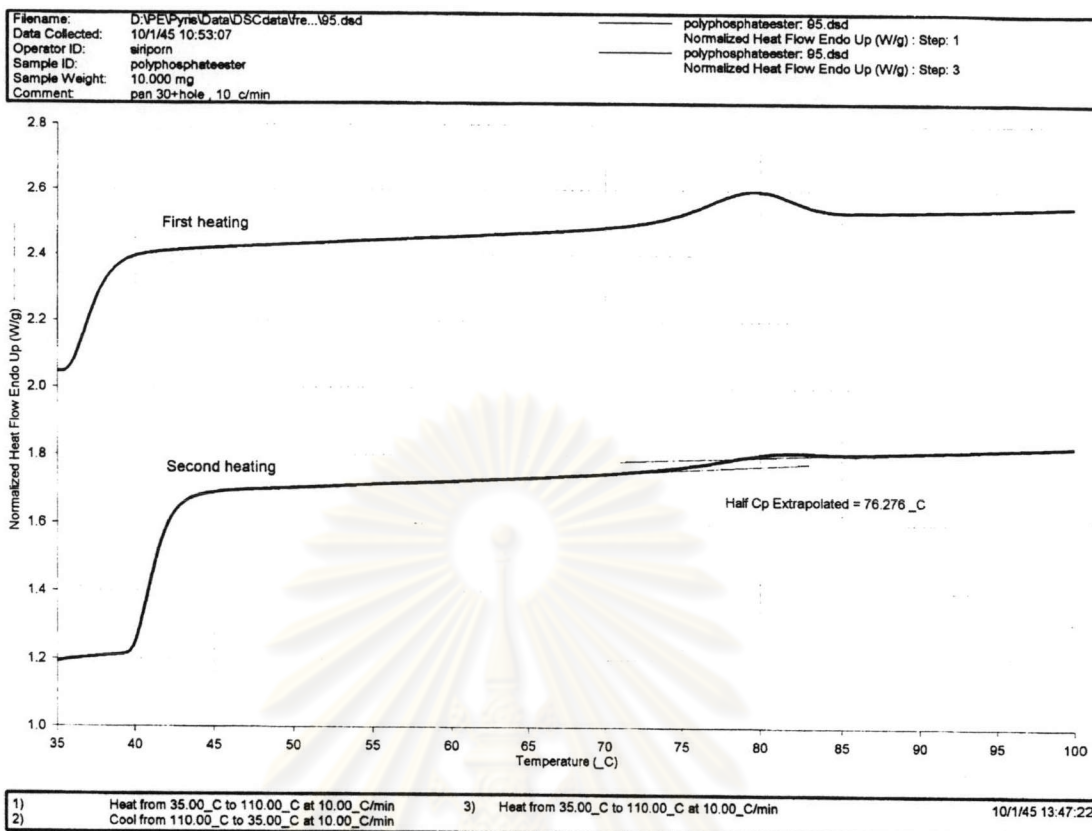


Fig 14E The DSC thermogram of polymer 20b

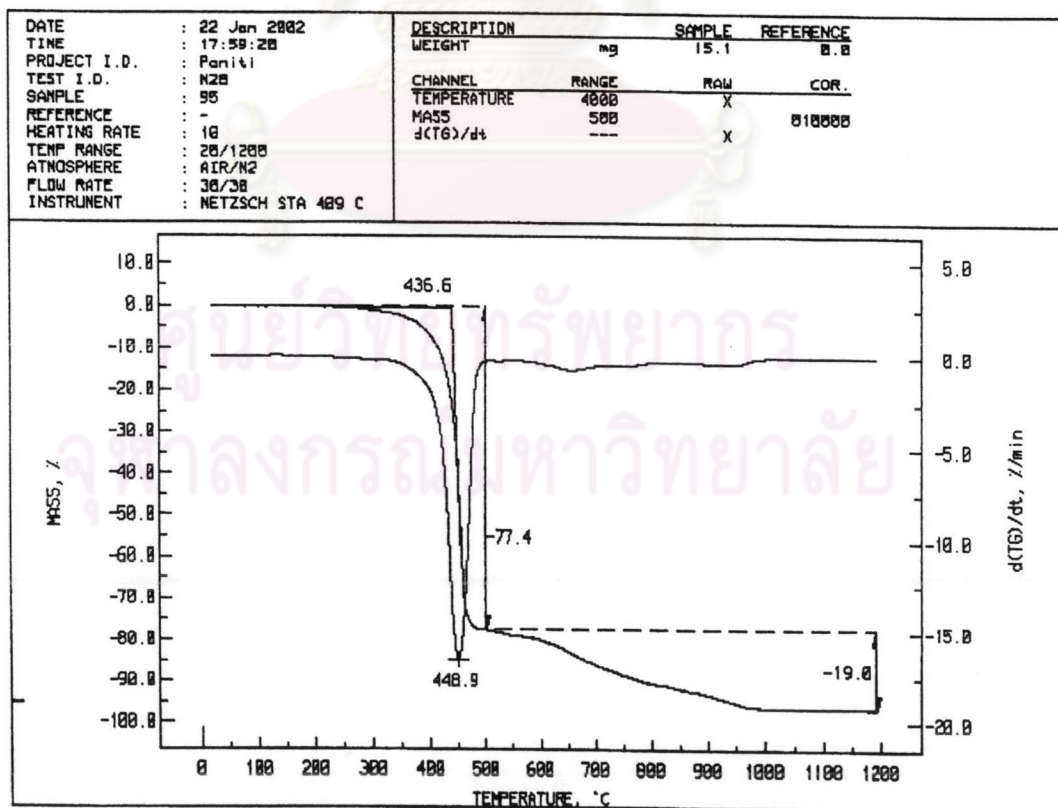


Fig 14F The TGA thermogram of polymer 20b

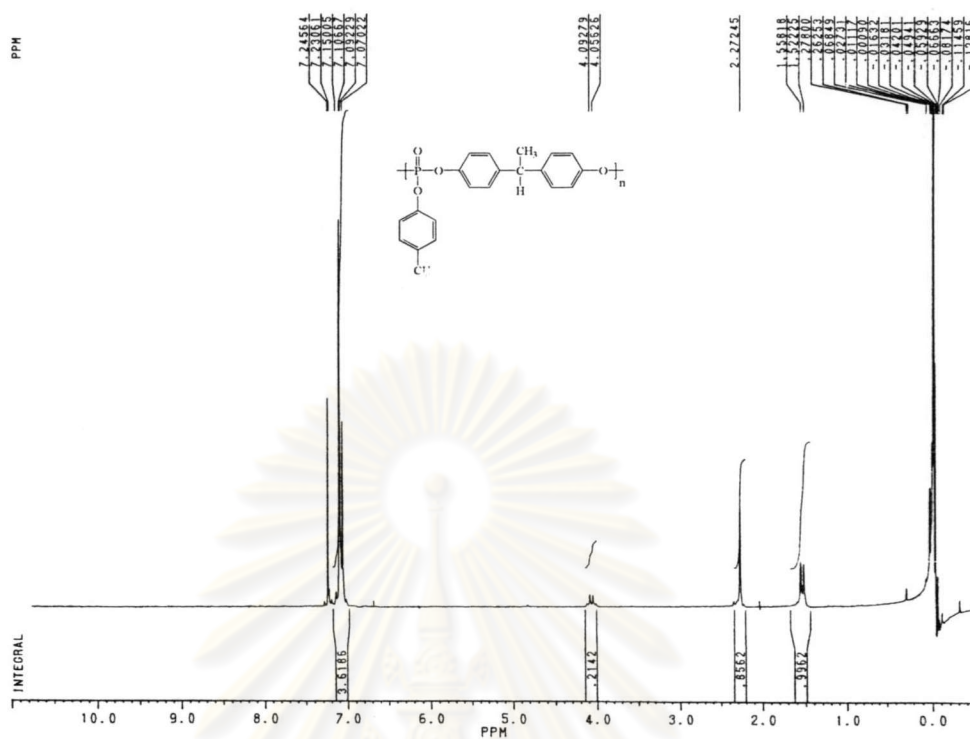


Fig 15A The  $^1\text{H-NMR}$  spectrum of polymer 20c

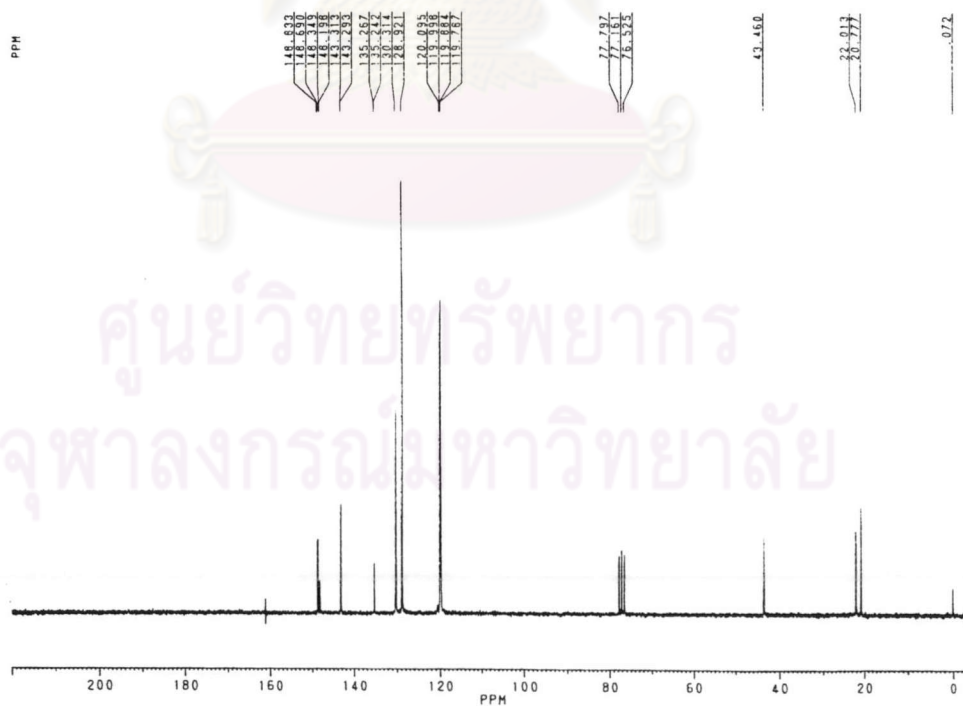


Fig 15B The  $^{13}\text{C-NMR}$  spectrum of polymer 20c

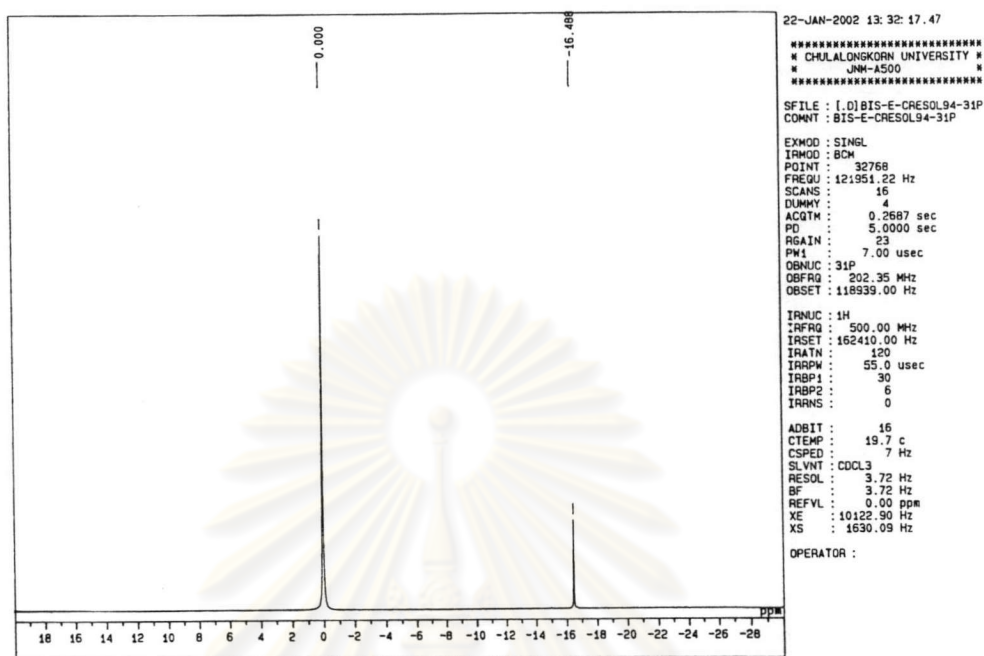


Fig 15C The  $^{31}\text{P}$ -NMR spectrum of polymer 20c

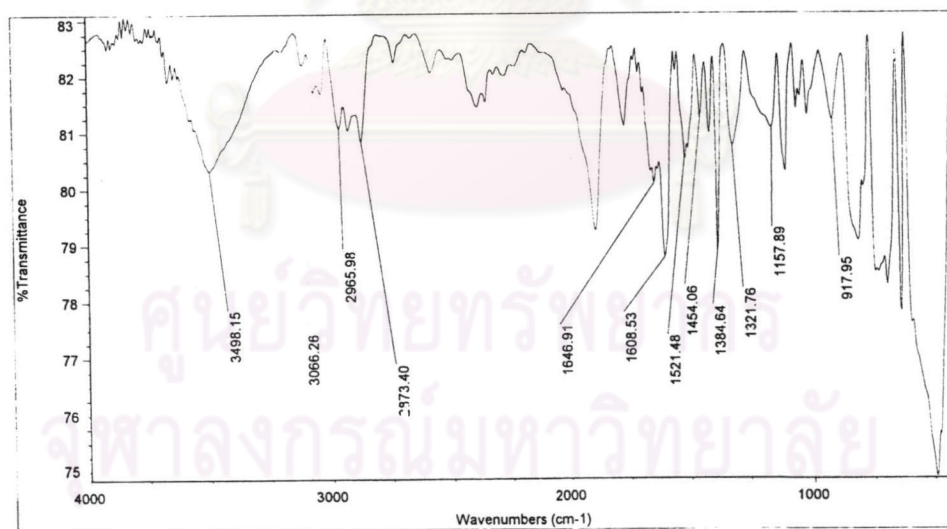


Fig 15D The IR spectrum of polymer 20c

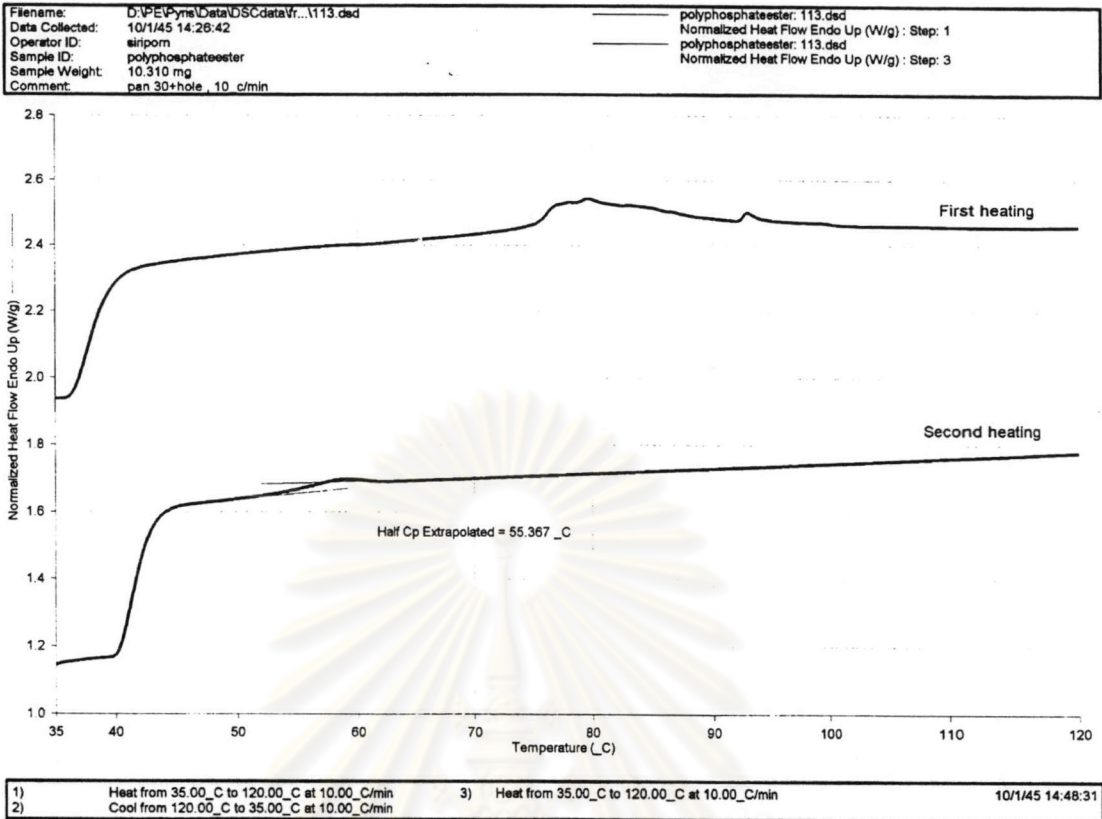


Fig 15E The DSC thermogram of polymer 20c

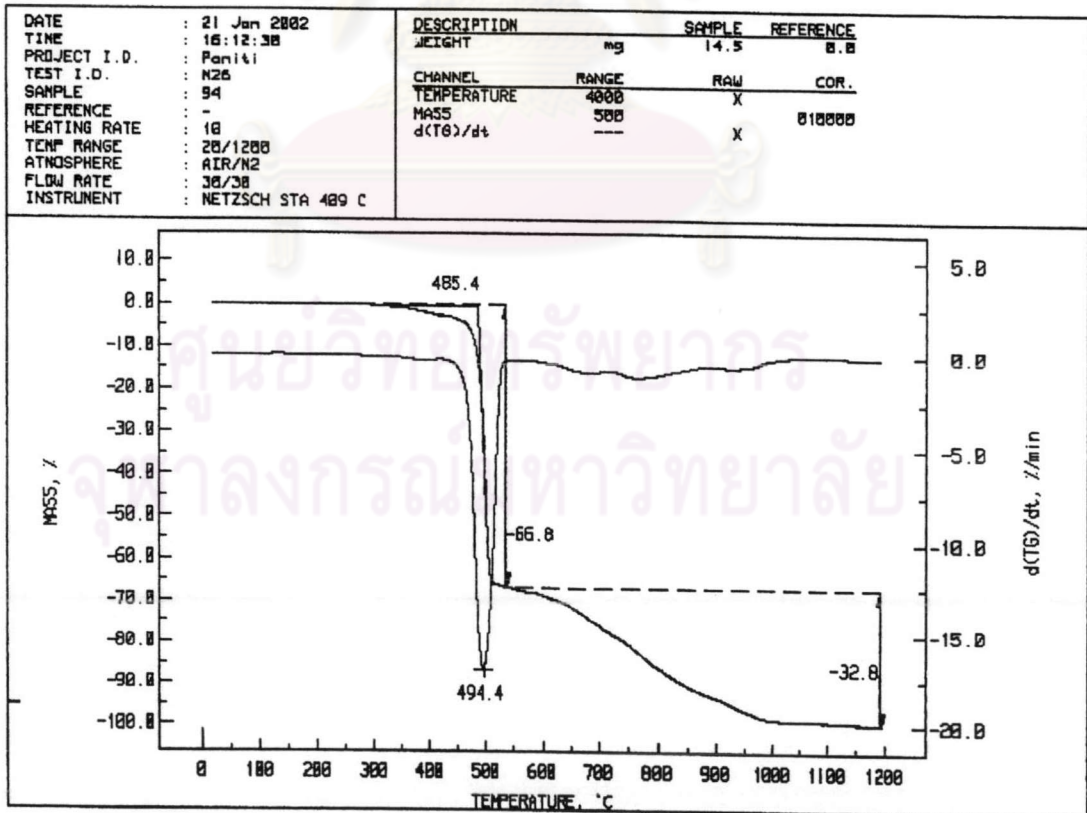


Fig 15F The TGA thermogram of polymer 20c

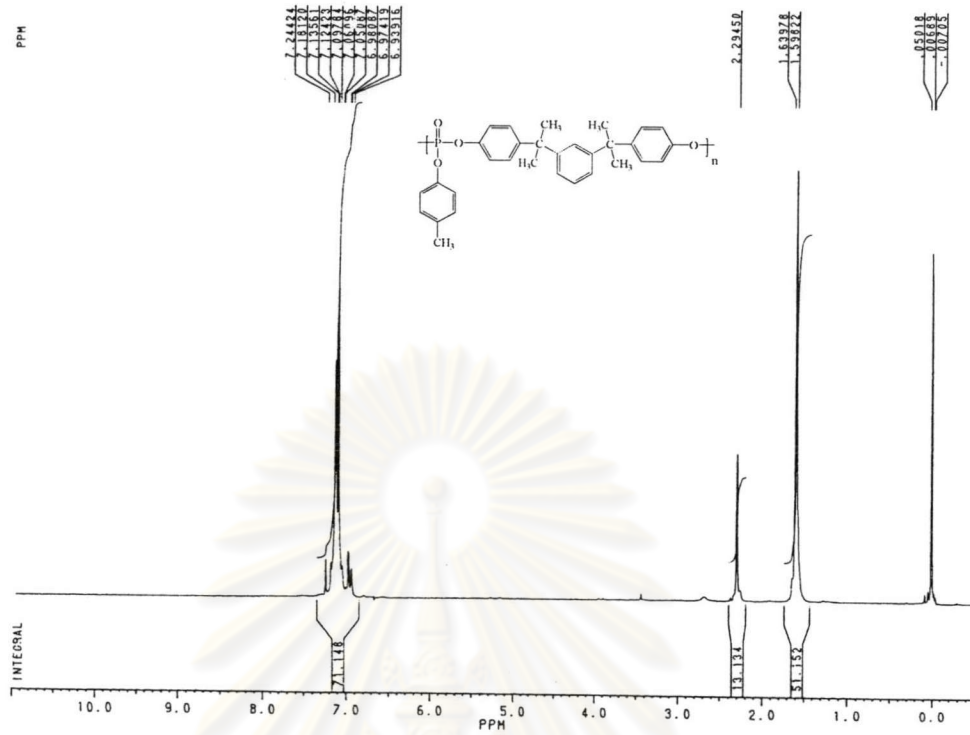


Fig 16A The  $^1\text{H-NMR}$  spectrum of polymer 20d

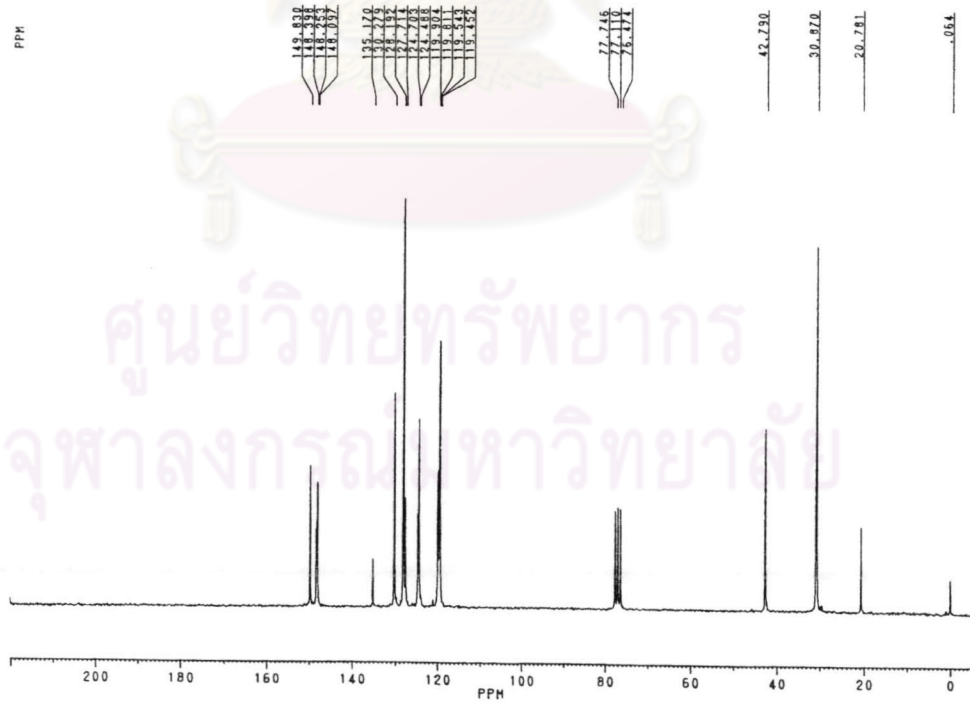


Fig 16B The  $^{13}\text{C-NMR}$  spectrum of polymer 20d



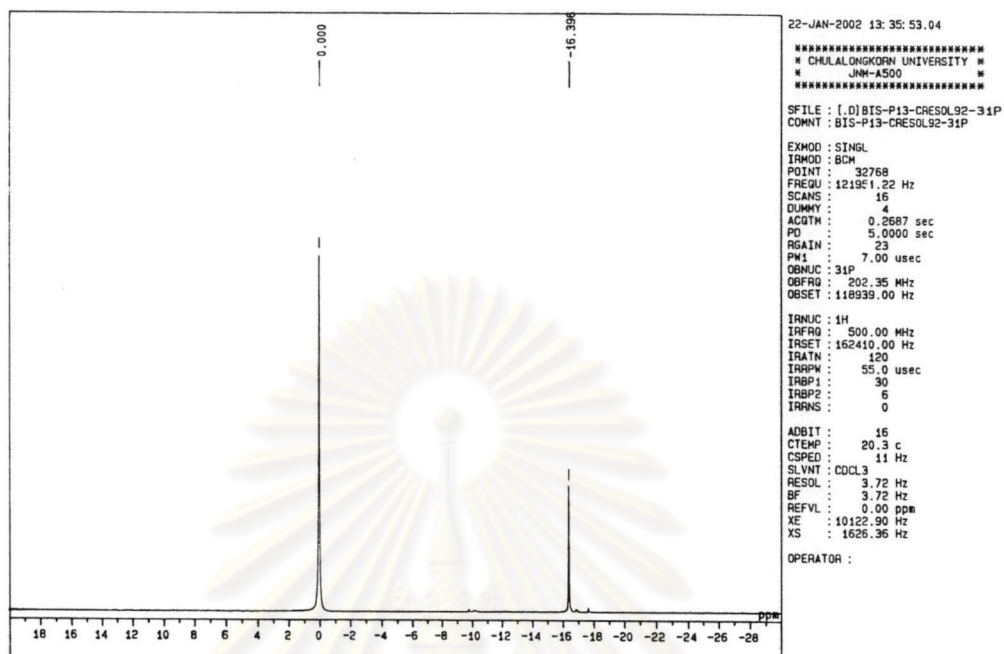


Fig 16C The  $^{31}\text{P}$ -NMR spectrum of polymer 20d

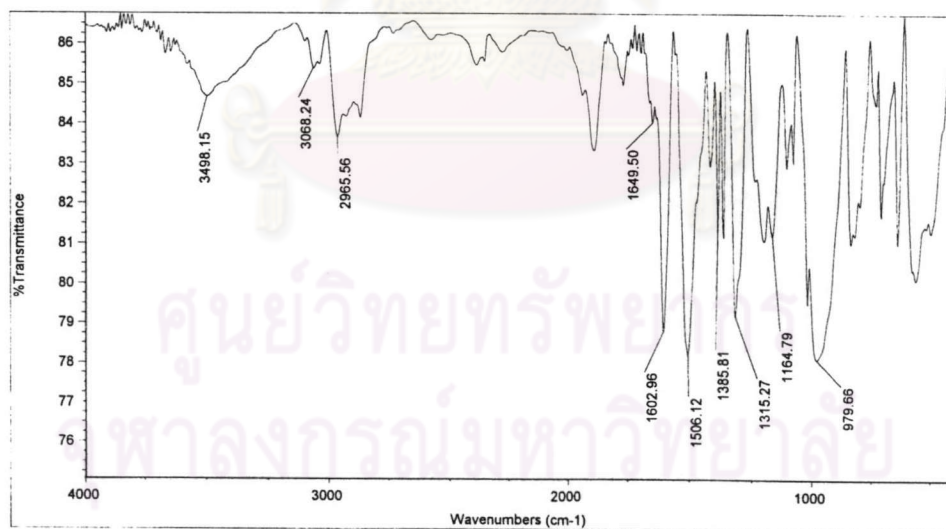


Fig 16D The IR spectrum of polymer 20d

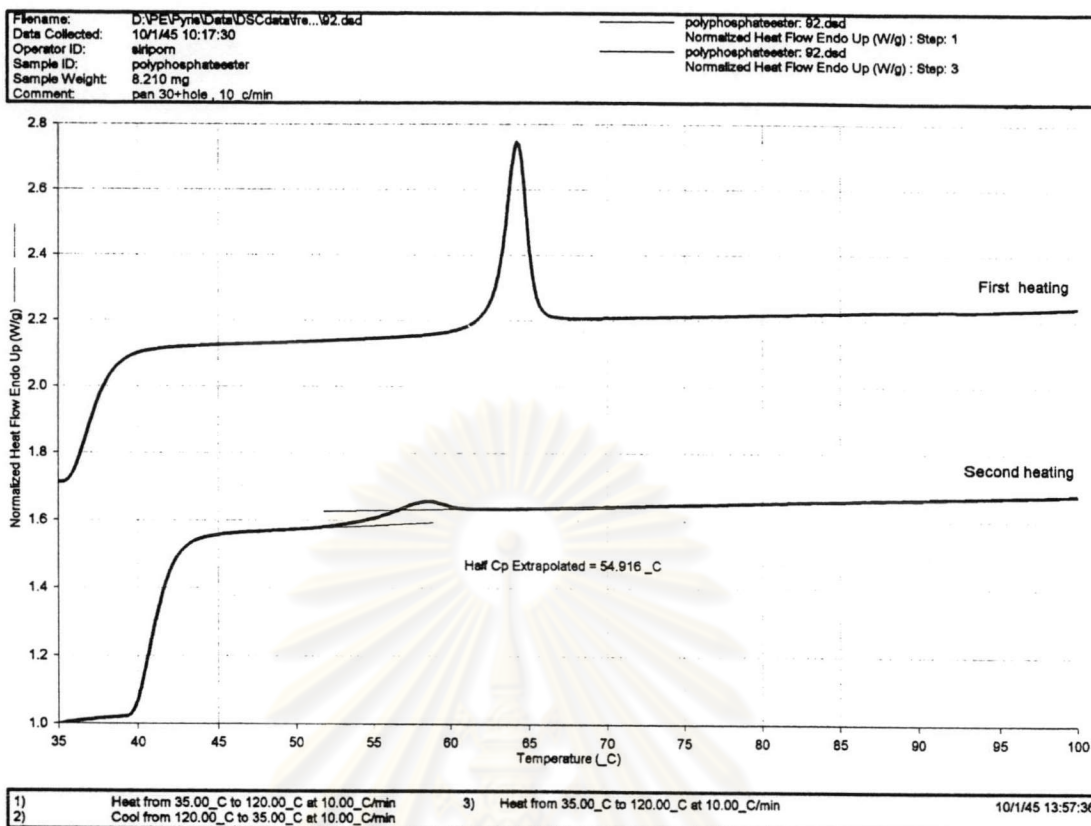


Fig 16E The DSC thermogram of polymer 20d

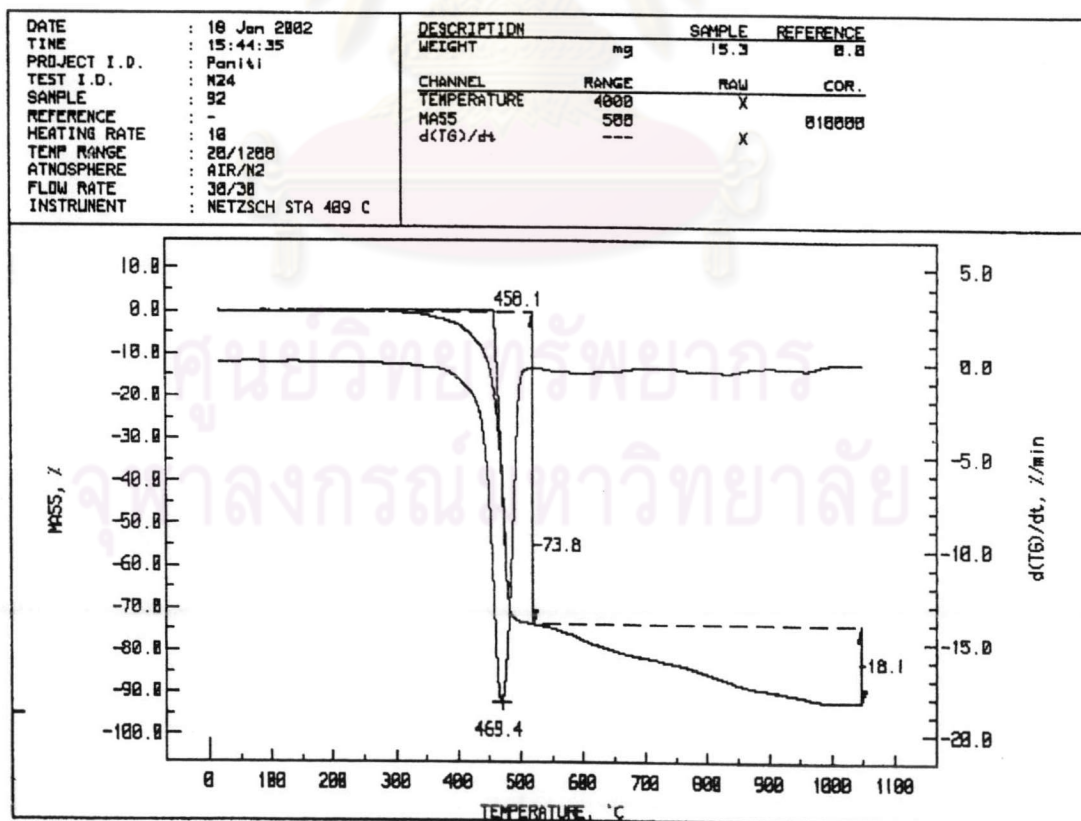


Fig 16F The TGA thermogram of polymer 20d

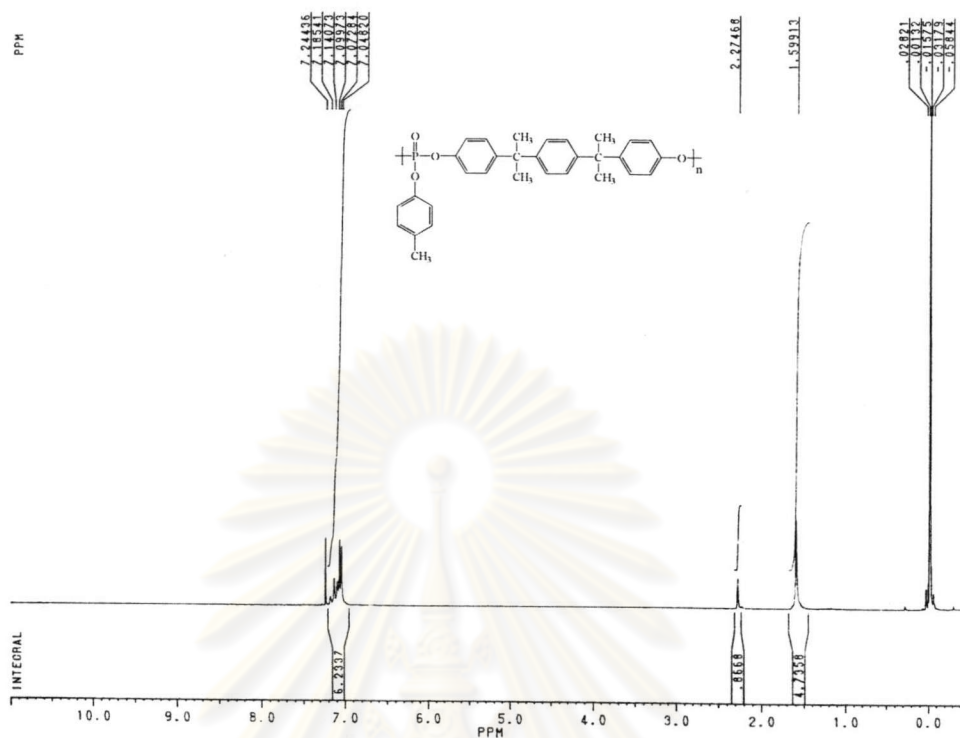


Fig 17A The <sup>1</sup>H-NMR spectrum of polymer 20e

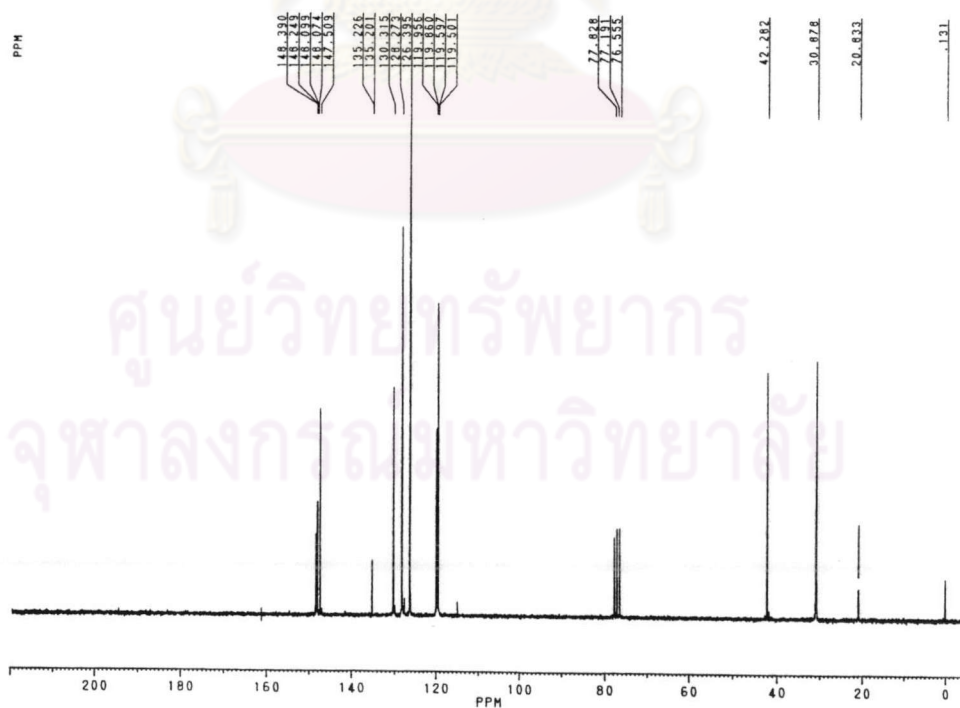


Fig 17B The <sup>13</sup>C-NMR spectrum of polymer 20e

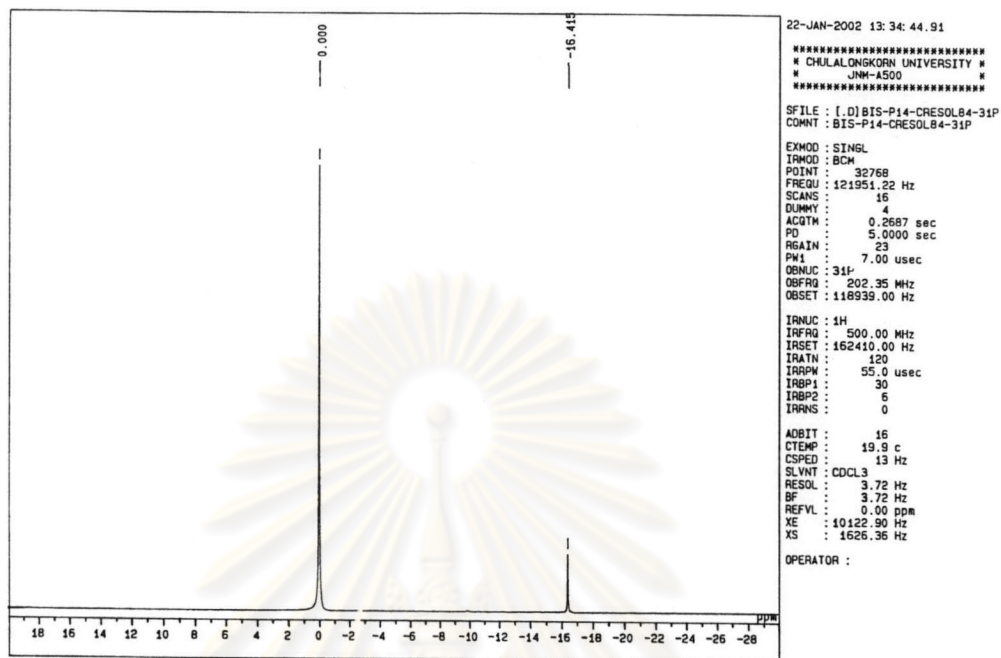


Fig 17C The  $^{31}\text{P}$ -NMR spectrum of polymer 20e

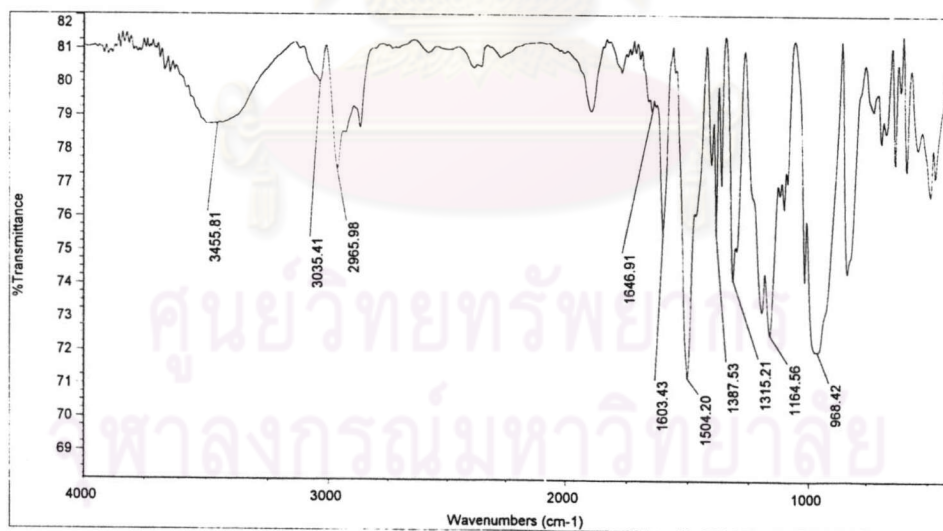


Fig 17D The IR spectrum of polymer 20e

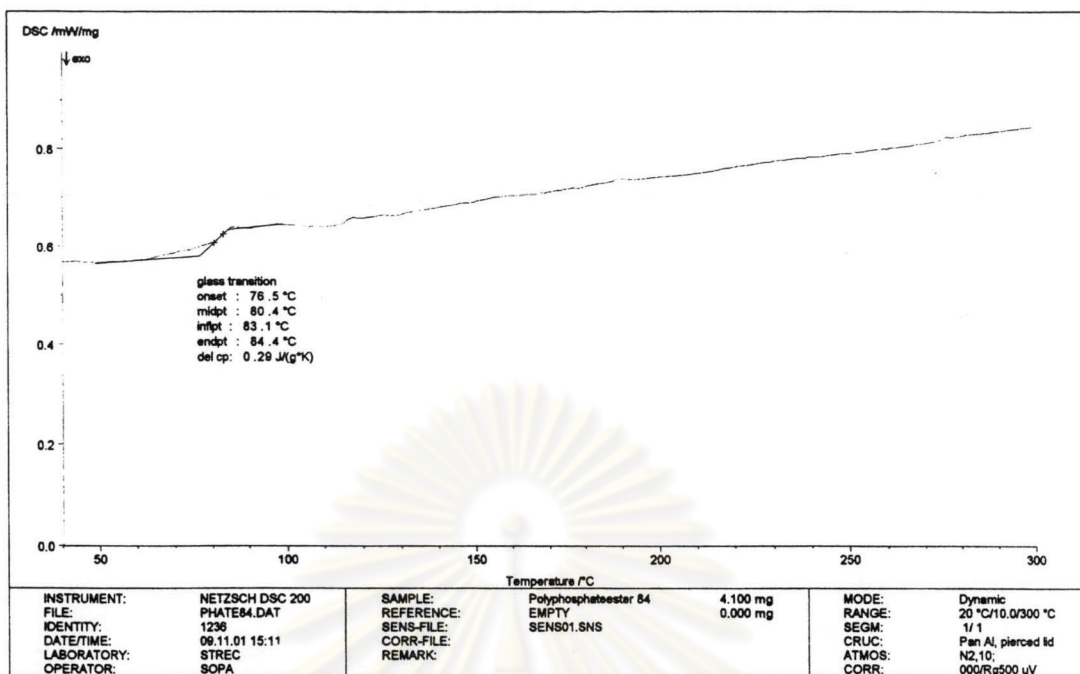


Fig 17E The DSC thermogram of polymer 20e

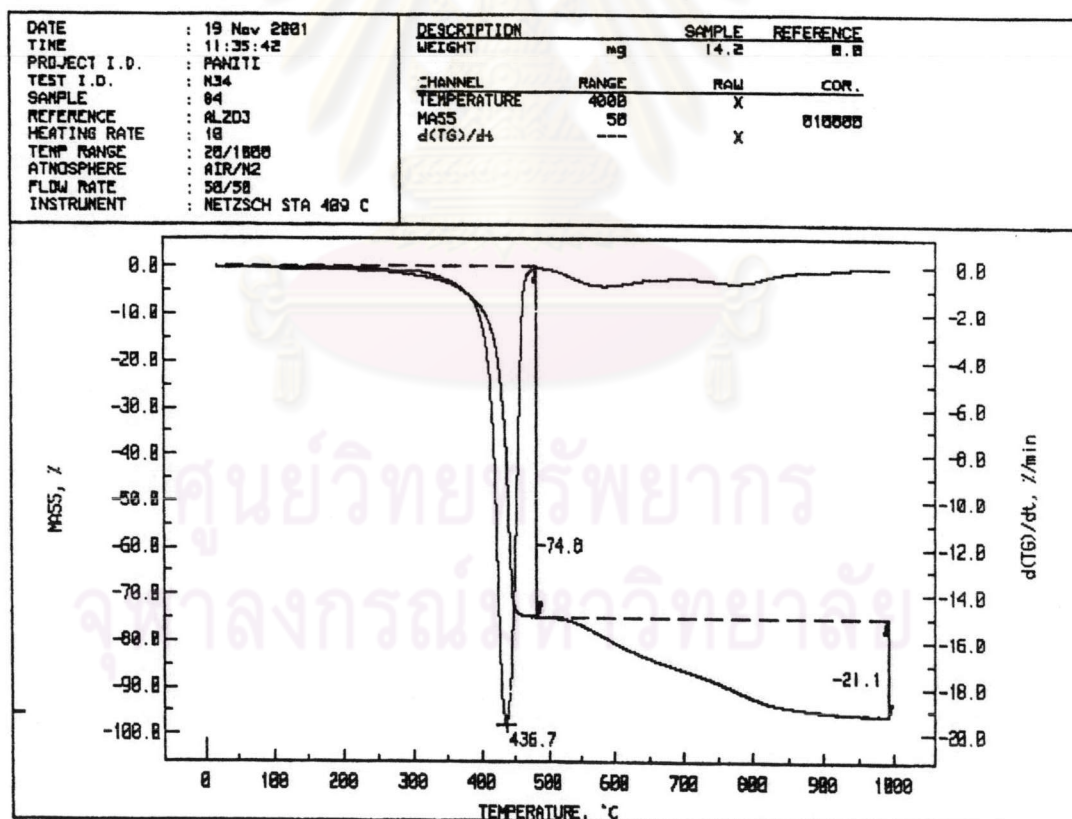
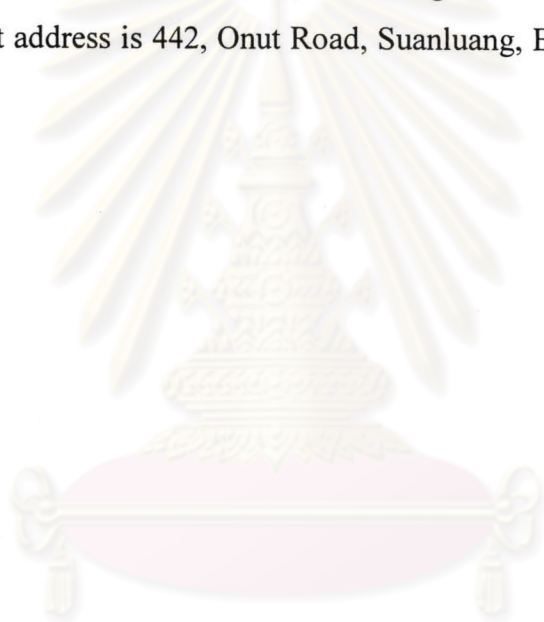


Fig 17F The TGA thermogram of polymer 20e

## CURRICULUM VITAE

Mr. Panithi Satisarat was born on January 5<sup>th</sup>, 1977 in Bangkok, Thailand. He received a Bachelor's Degree of Science, majoring in chemistry from Chulalongkorn University in 1999. Since 1999, he has been a graduate student studying organic chemistry as his major course at Chulalongkorn University. During his studies towards the Master's degree, he was awarded a teaching assistant scholarship by The Faculty of Science in 2000-2001 and was supported by a research grant for his Master degree's thesis from the Graduate School, Chulalongkorn University.

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