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Appendices

1. % Product yield of gas products

$$\% \text{ Product yield of X} = \frac{\text{Concentration of X} \times 100}{\text{Total concentration of products}}$$

$$\text{Concentration of X} = \frac{b \times c}{a}$$

a = Peak area of X in standard gas

b = % molar of X in standard gas

c = Peak area of X in sample products

2. % Product yield of liquid products

$$\% \text{ Product yield of X} = \frac{\text{Concentration of X} \times 100}{\text{Total concentration of products}}$$

$$\text{Concentration of X} = \frac{b \times c}{a}$$

a = Peak area of X in standard liquid

b = % molar of X in standard liquid

c = Peak area of X in sample products

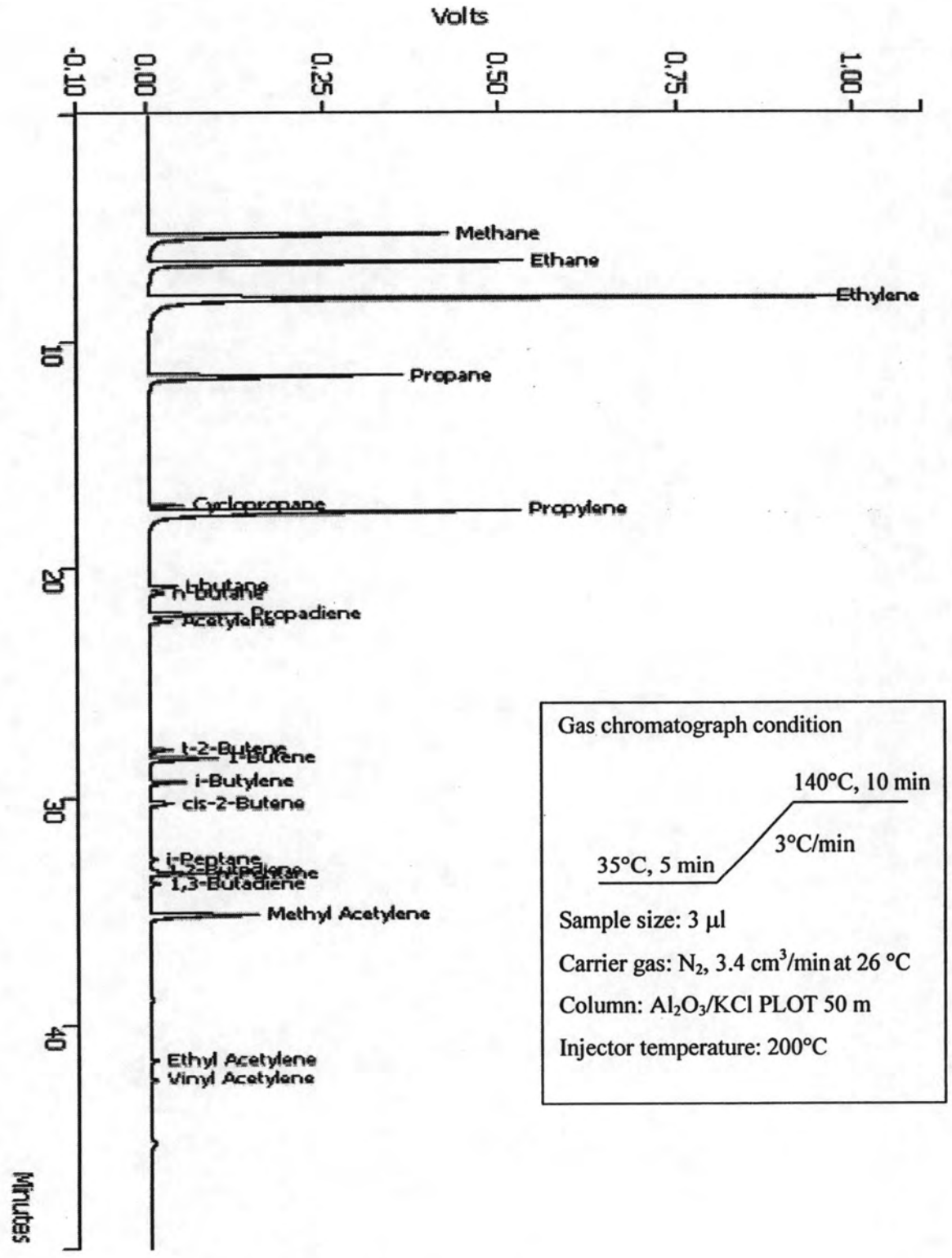

Figure A-1 Gas chromatogram of standard mixture HC gas.

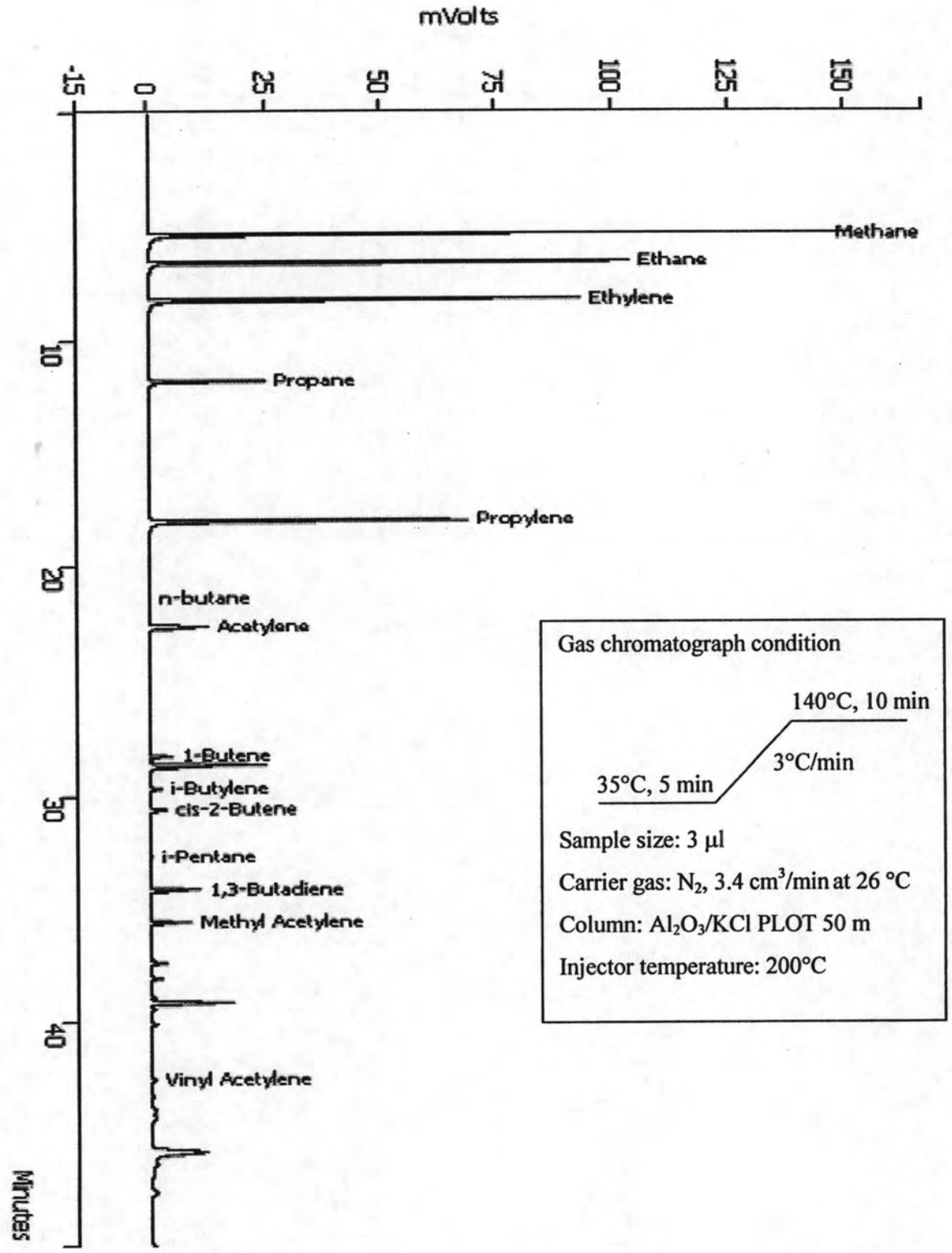

Figure A-2 Gas chromatogram of gas product obtained from catalytic cracking of glycerol waste over Pd-SBA-15 at 650°C.

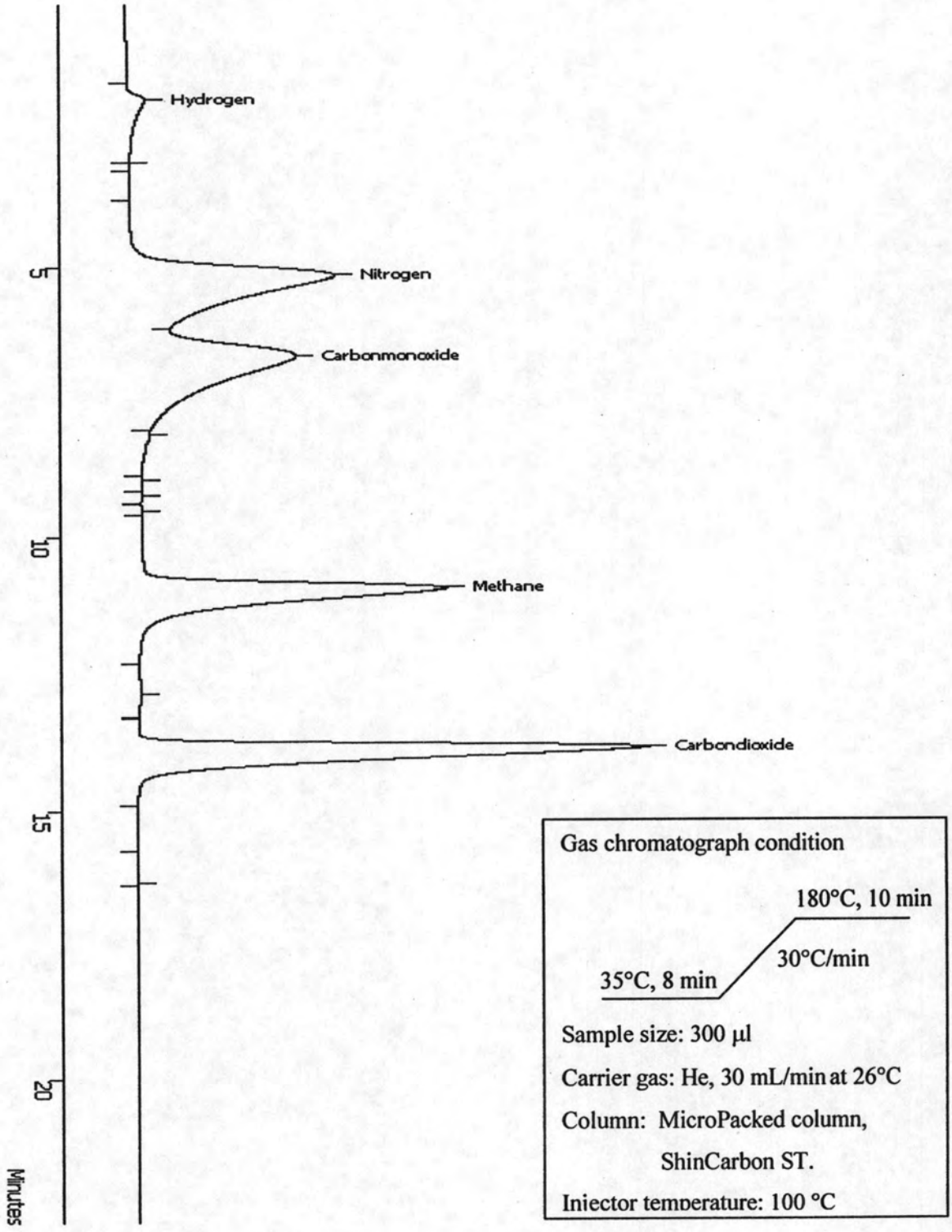

Figure A-3 Gas chromatogram of standard mixture permanent gas.

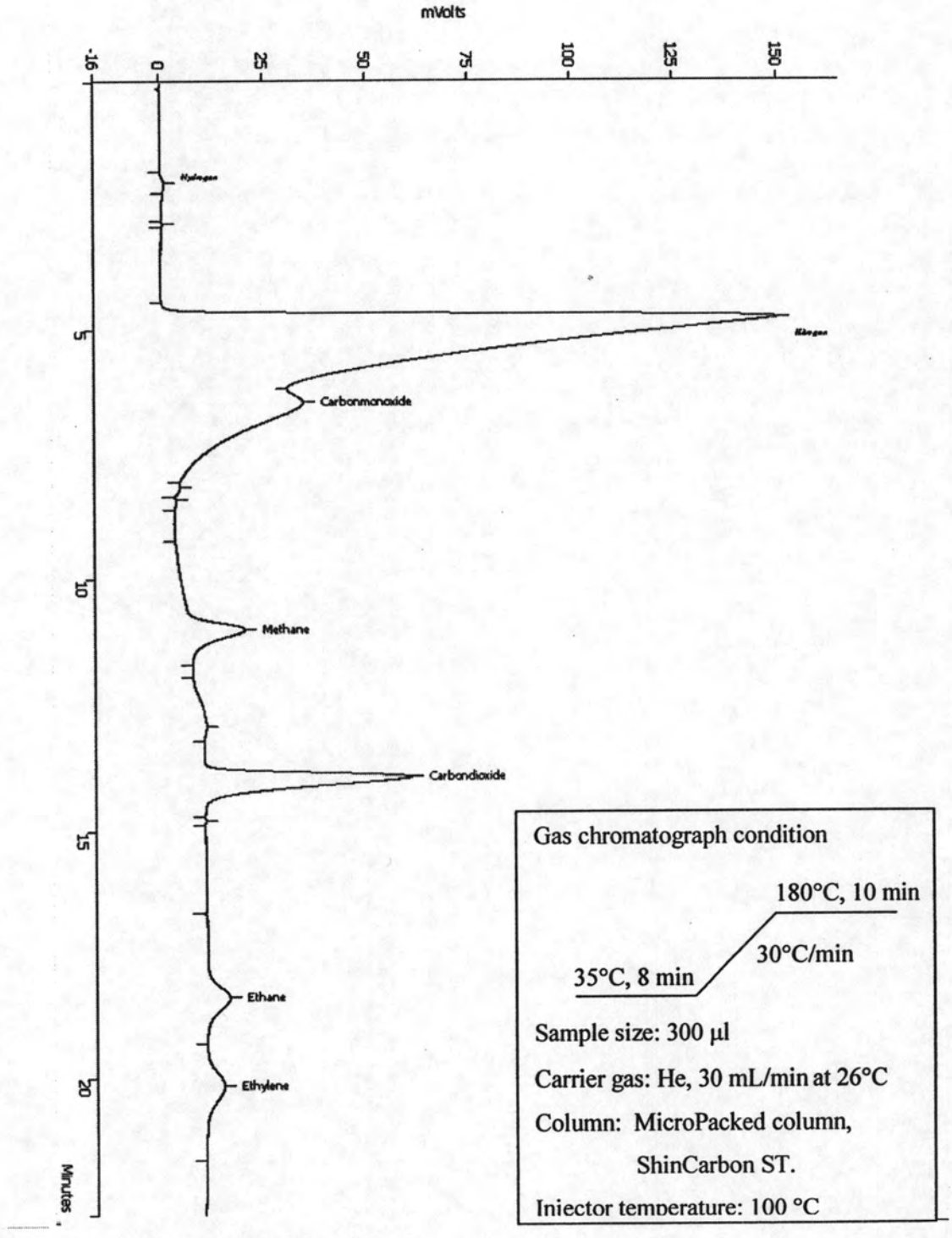

Figure A-4 Gas chromatogram of gas product obtained from catalytic cracking of glycerol waste over Pd-SBA-15 at 650°C.

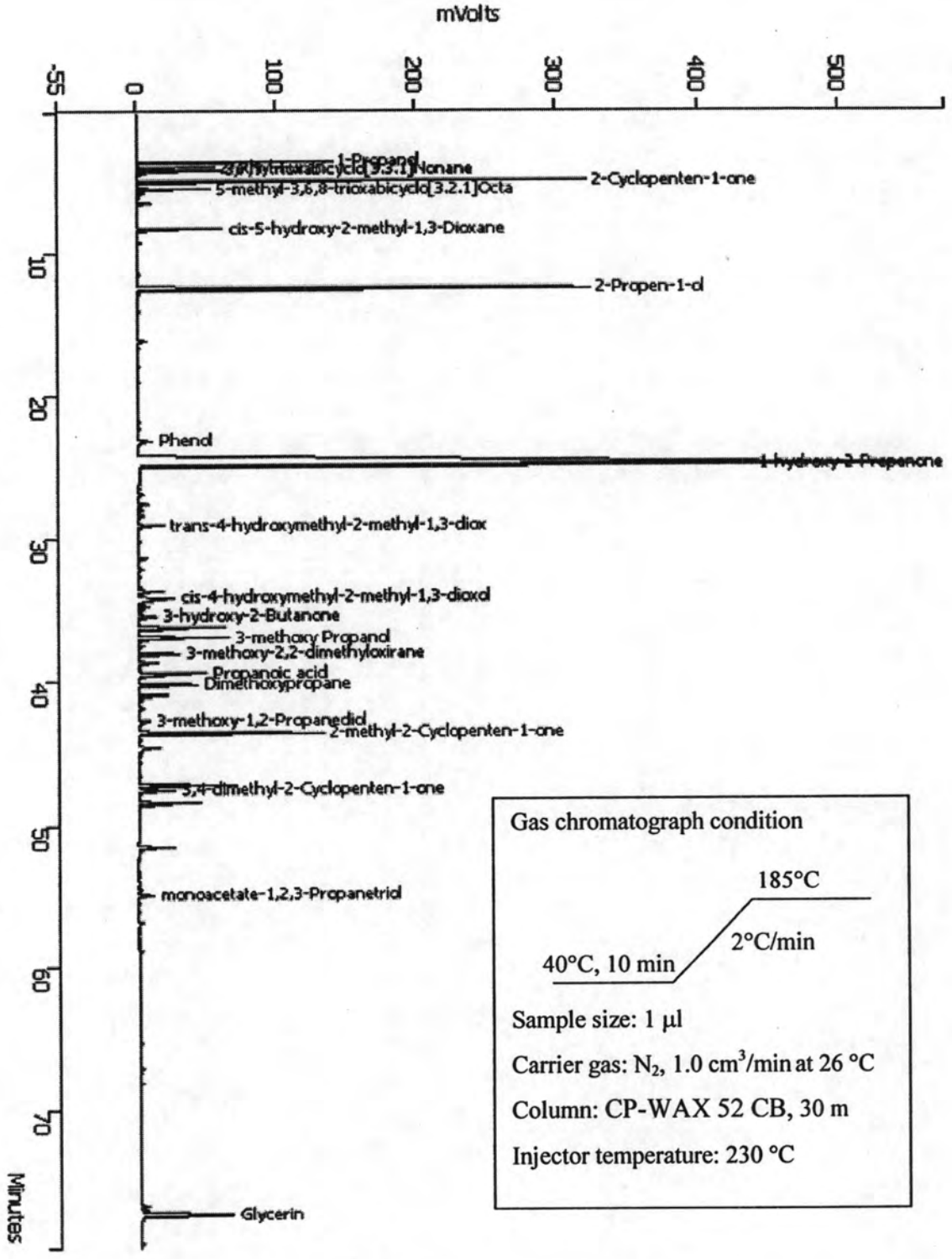

Figure A-5 Liquid chromatogram of liquid product obtained from catalytic cracking of glycerol waste over Pd-SBA-15 at 650°C.

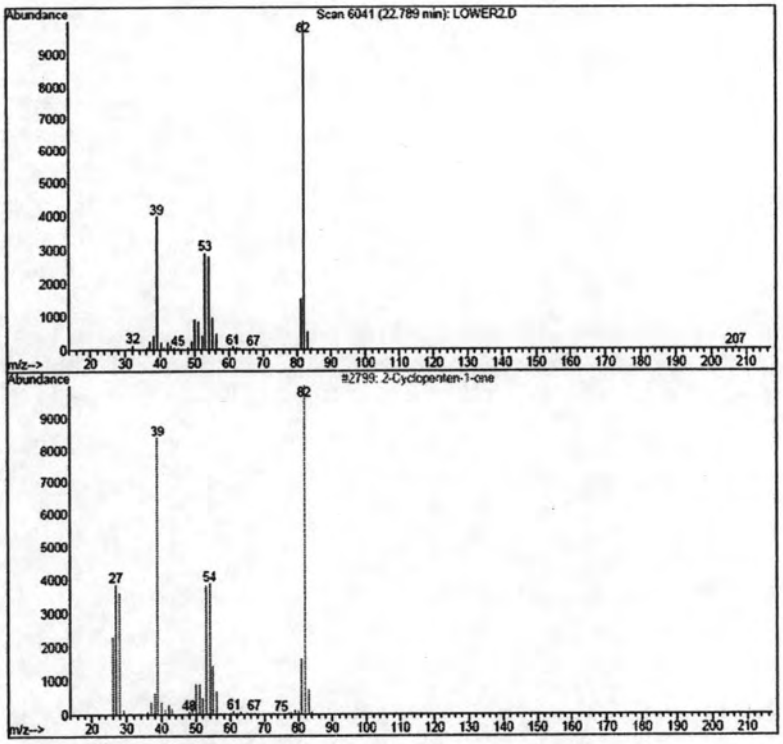

Figure A-6 Mass spectrum of 2-cyclopenten-1-one

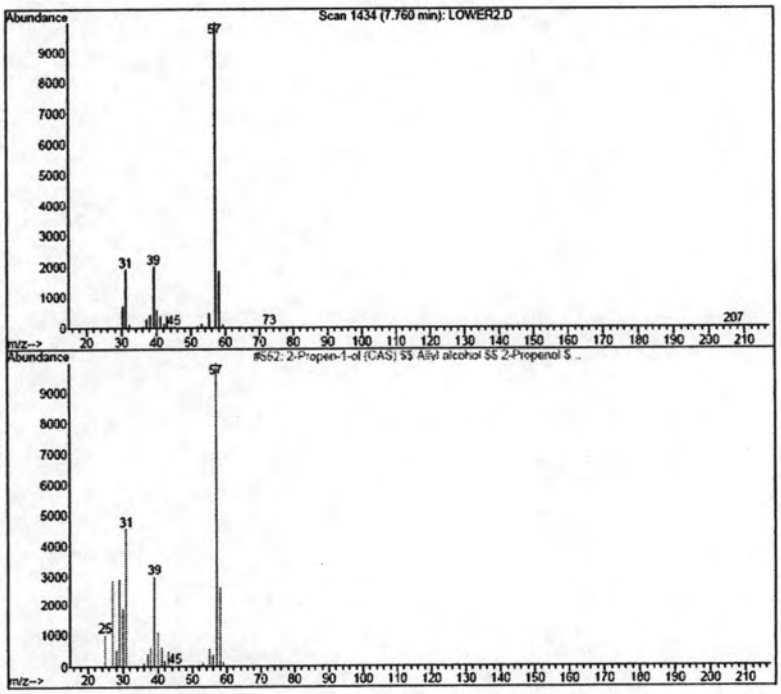

Figure A-7 Mass spectrum of 2-propen-1-ol

VITAE

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