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(54) **HYDROXYMETHYL FURFURAL OXIDATION METHODS**

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(57) **ABSTRACT**
A method of oxidizing hydroxymethylfurfural (HMF) includes providing a starting material which includes HMF in a solvent comprising water into a reactor. At least one of air and O₂ is provided into the reactor. The starting material is contacted with the catalyst comprising Pt on a support material where the contacting is conducted at a reactor temperature of from about 50° C. to about 200° C. A method of producing an oxidation catalyst where ZrO₂ is provided and is calcined. The ZrO₂ is mixed with platinum (II) acetylacetonate to form a mixture. The mixture is subjected to rotary evaporation to form a product. The product is calcined and reduced under hydrogen to form an activated product. The activated product is passivated under a flow of 2% O₂.

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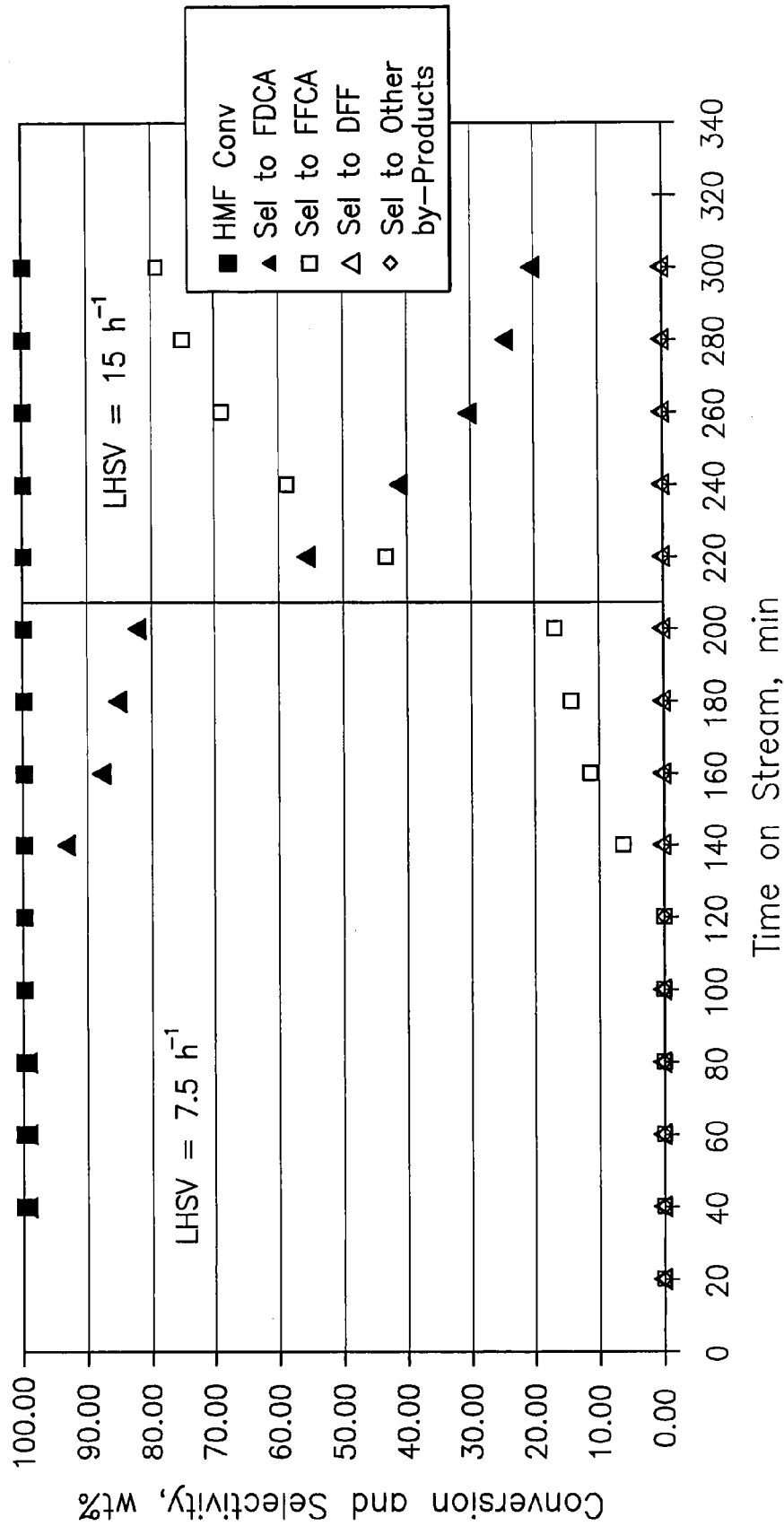
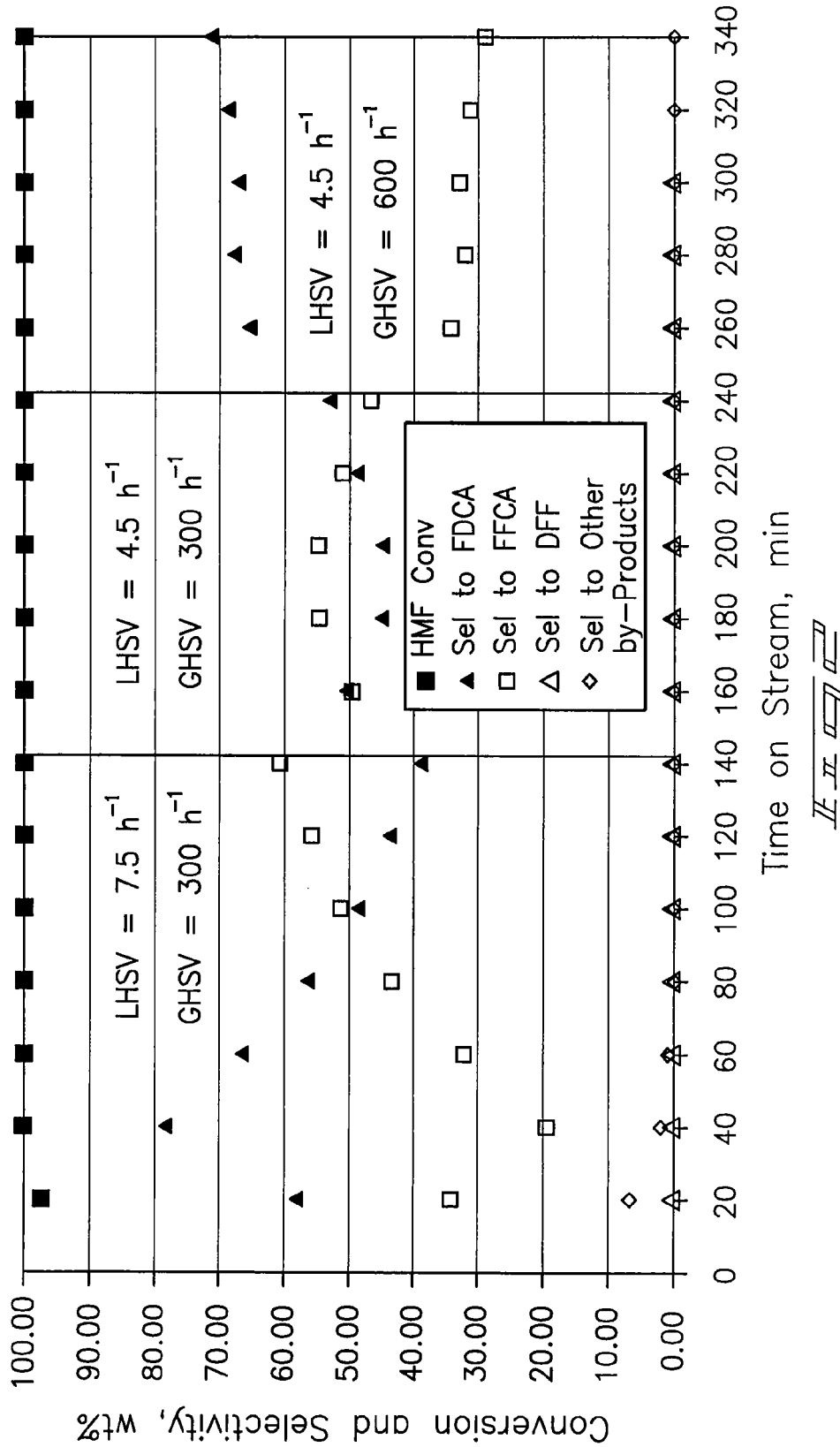


Figure 11



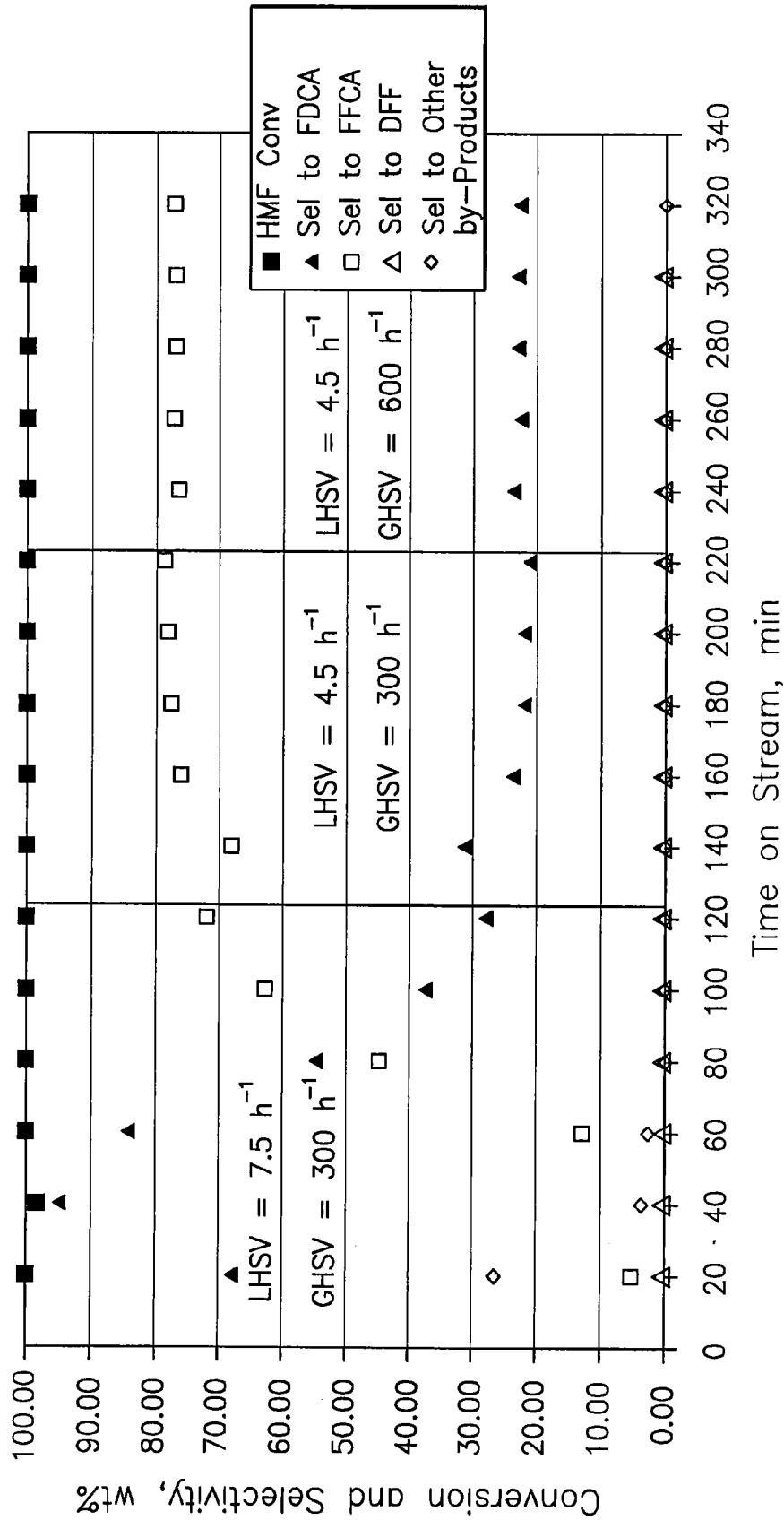


Figure 5

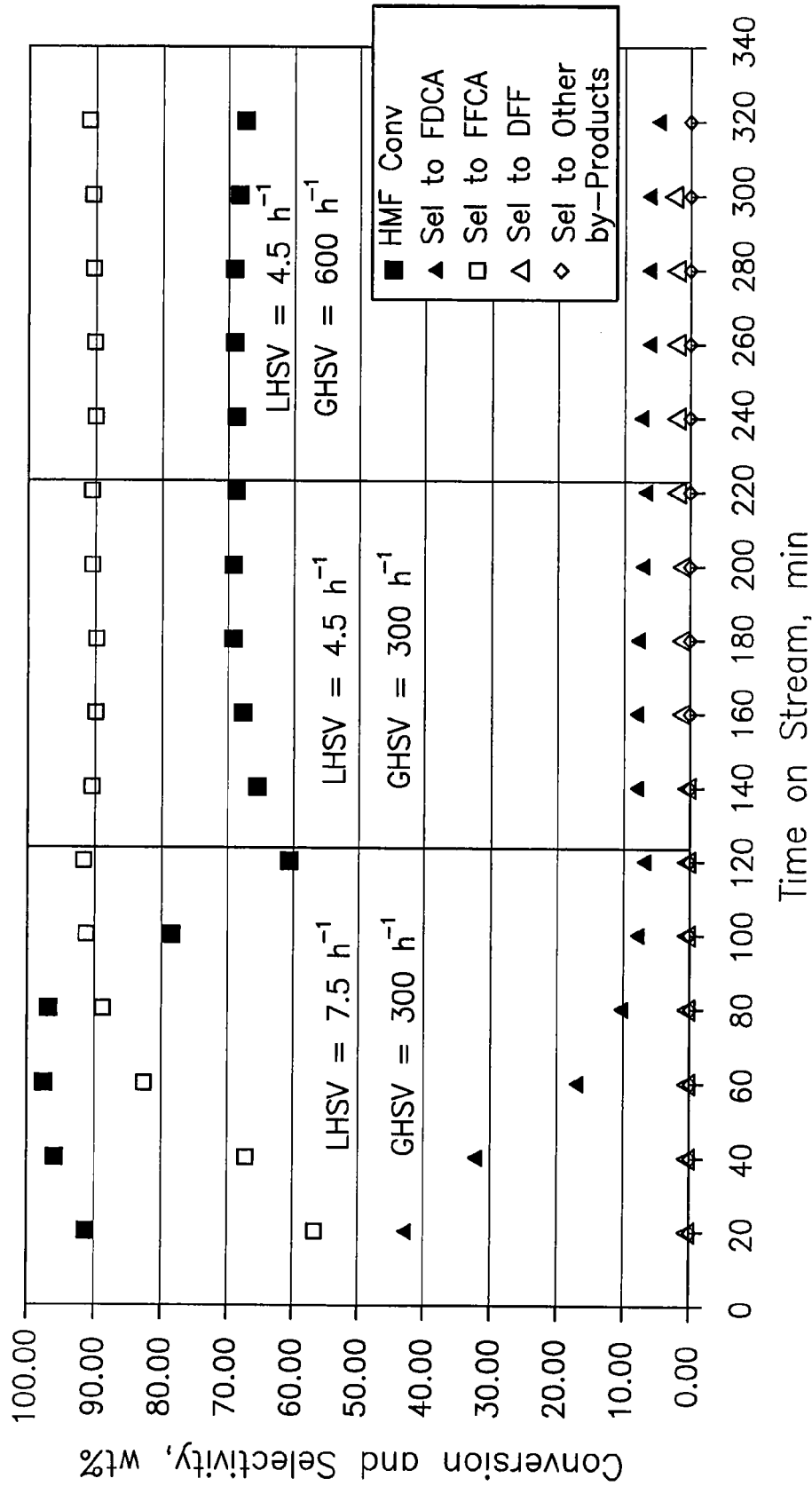


Figure 4

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