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(54) Title: RADIATION ACTIVATION AND SCREENING OF CATALYST LIBRARIES FOR CATALYST EVALUATION AND REACTORS THEREFOR

(57) Abstract

Rapid screening for activities and selectivities of catalyst libraries having addressable test sites is achieved by contacting potential catalysts at the test sites with reactant streams forming product plumes at the addressable test sites. The product plumes are screened by passing a radiation beam of an energy level to promote formation of specified photoions and photoelectrons which are detected by microelectrode collection *in situ* in proximity to the respective addressable test site. Product plumes may be screened row by row or all product plumes emanating from an entire catalyst library may be simultaneously screened. Suitable reactors and microreactors for radiation activation screening are disclosed.

