Abstract for Catalysis Gordon Research Conference 2020

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“Beyond Schulz−Flory: Ethylene Oligomerization with Surface-Stapled Pyridyldiimine Transition Metal Catalysts”

Ethylene oligomerization to linear alpha olefins conventionally yields a Schulz−Flory distribution of products, such that less valuable products (C4 and C12+) are made in significant quantities. We have attached pyridyldiimine transition metal catalysts (known to be highly active, Schulz-Flory ethylene oligomerization catalysts) to solid supports, such that the surface plays a role in confining growing oligomer chains. These surface-stapled catalysts are shown to retain high activity and yield an altered distribution of products. Effects of varying the metal center, the ligand sterics, and the ligand-surface attachment chemistry are explored.