**Ethylene oligomerization: Molecular strategies to avoid polyethylene fouling**

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A major concern of early transition metal ethylene oligomerization catalysts is undesired polyethylene formation, which can foul the reactor or downstream units and cause downtime. Ideally, optimized catalysts can retain excellent activity and selectivity toward oligomers while eliminating polyethylene formation. We have tackled this challenge through a combination of molecular modelling, ligand synthesis, and surface functionalization.