
# Adsorption, polymerization and decomposition of acetaldehyde on clean and carbon-covered Rh(111) surfaces

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**Highlights**

- The adsorption form of acetaldehyde vary drastically by exposure on Rh(111).
- At higher exposure polymerization processes occurred on the surface.
- Desorption of trimers were also evidenced by TPD.
- Surface carbon decreases the uptake of adsorbed acetaldehyde.
- Carbon reduces the formation of polymers and induces the C-O bond scission.