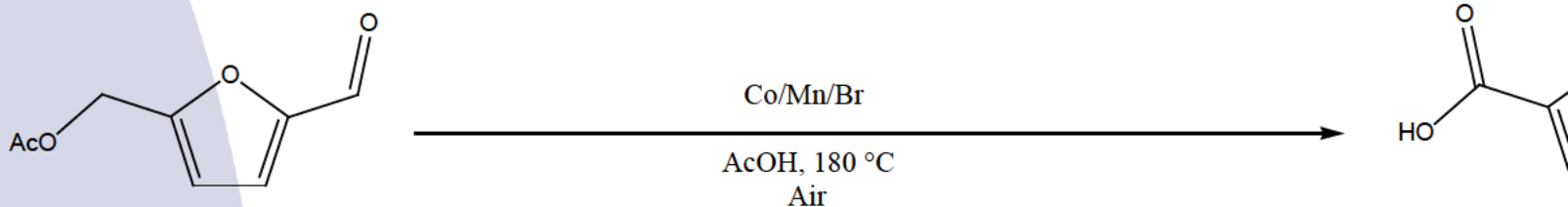


Co/Mn/Br AMF Oxidation 5-MF and DMF oxidation

Cesar Muñoz de Diego
Amsterdam 10-Sep-2009

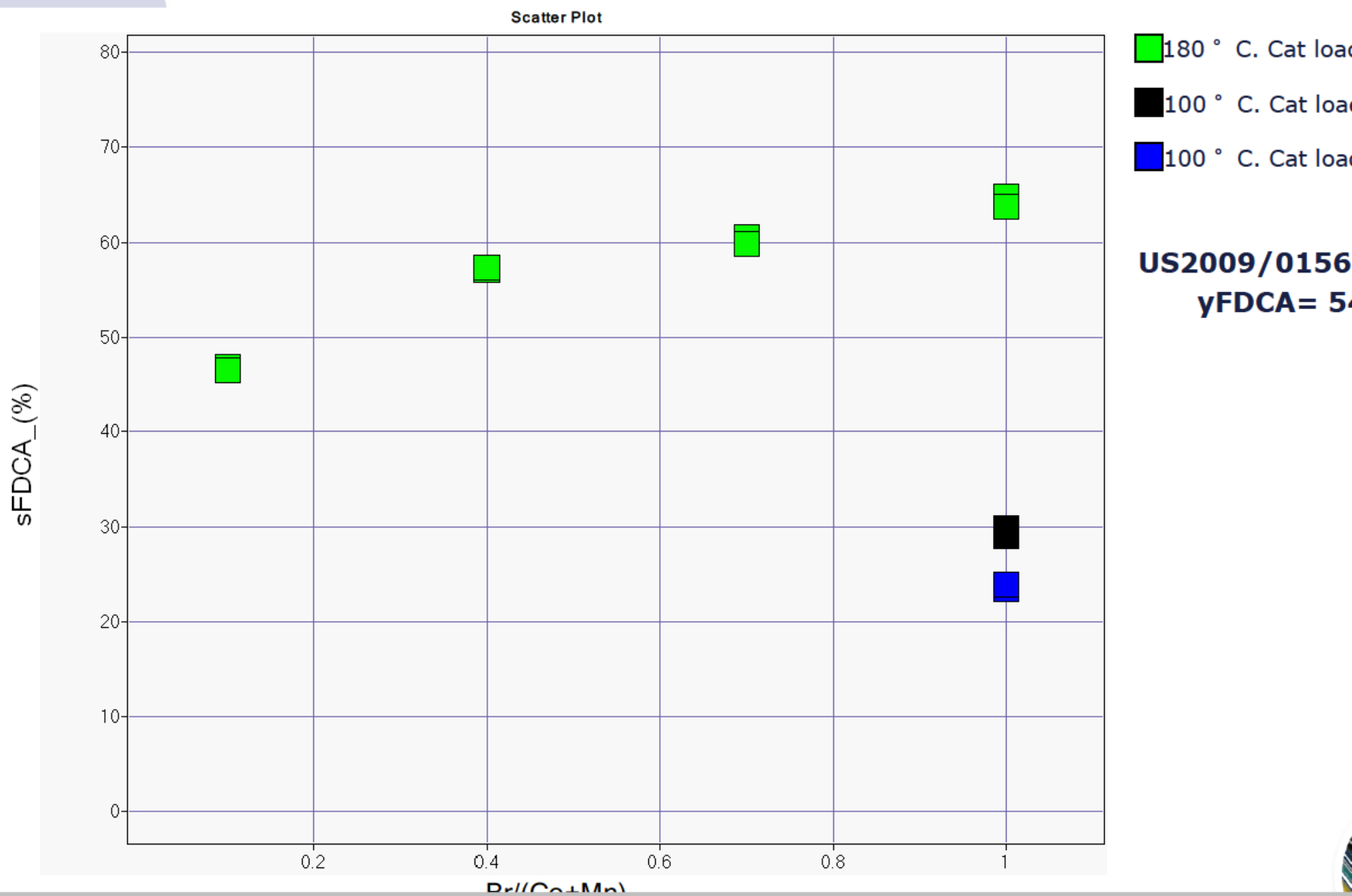
AMF oxidation. Patent results vs Our results



Fixed Conditions:

- Pressure: 30 bar.
- Catalyst loading: 3.5, 5.25 mol % (Co+Mn)
- Solvent: Acetic acid.
- Temperature: 180 °C
- Reaction time: 120 minutes.
- Br/(Co+Mn): 1.0
- Co/Mn ratio: 1/1

AMF oxidation. Patent results vs Our results



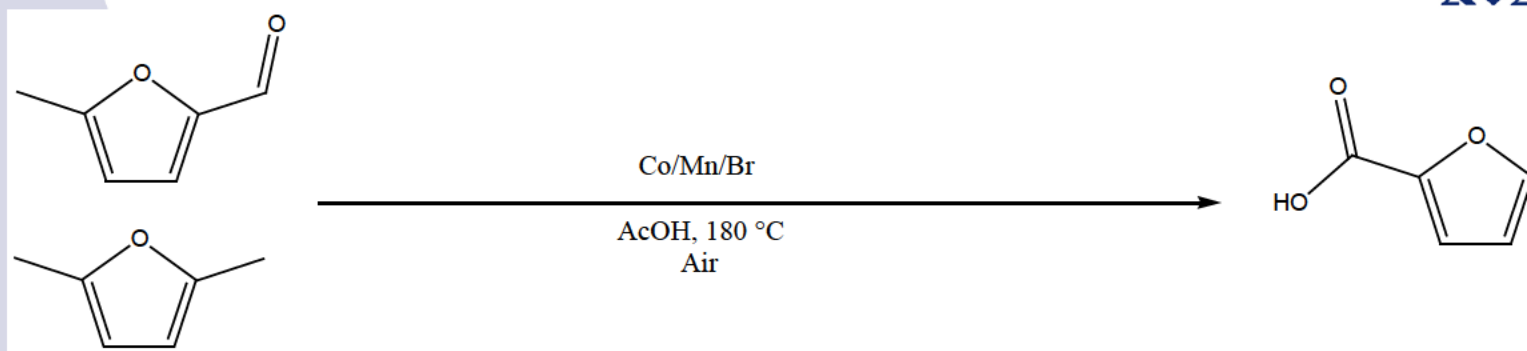
AMF oxidation. Patent results vs Our results

Conclusions:

FDCA can be formed from AMF at 100 °C.

The results obtained are much lower than those claimed in the patent even using 1.5 times more catalyst.

DMF and 5-MF oxidation



Fixed Conditions:

- Pressure: 50 bar.
- Catalyst loading: 5.4 mol % (Co+Mn)
- Solvent: Acetic acid.
- Temperature: 180 °C
- Reaction time: 120 minutes.
- Co/Mn ratio: 1/1

Variables:

- Br/(Co+Mn): 1.0, 0.7, 0.4 and 0.1

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