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## Reactions of cationic palladium alpha-diimine complexes with nitrogen-containing olefins

Li, Weidong; Zhang, Xiaochun; Meetsma, Auke; Hessen, Bart

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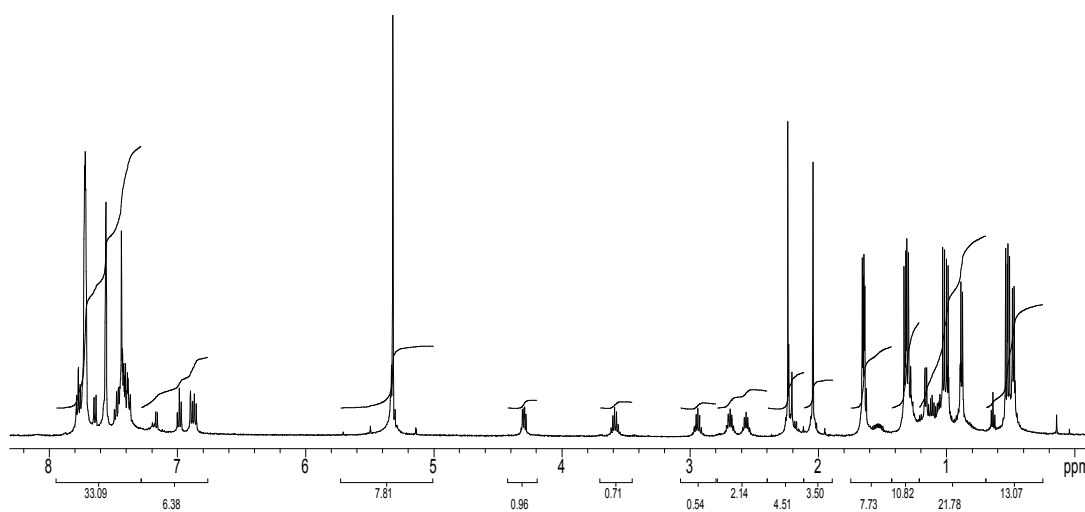
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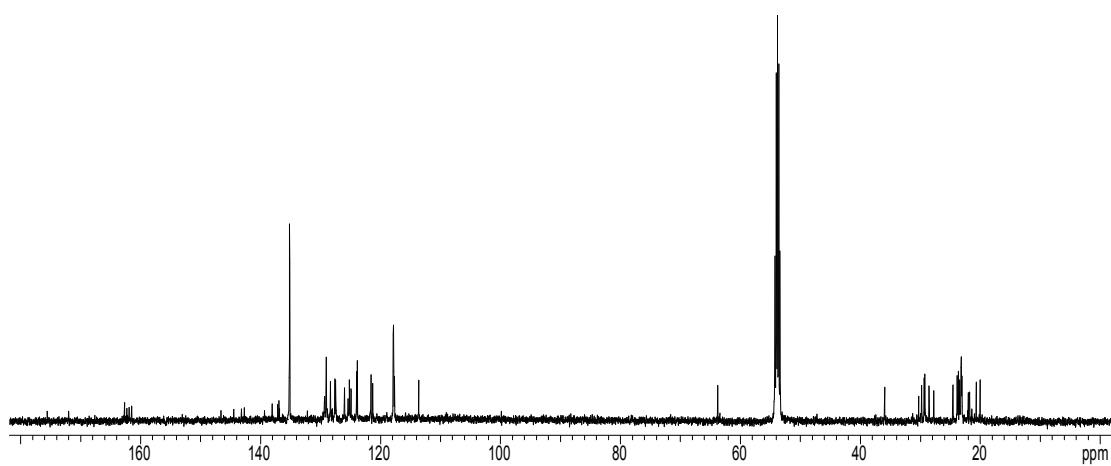
**Supporting Information to:**

“Reactions of Cationic Palladium  $\alpha$ -Diimine Complexes with Nitrogen-containing Olefins: Branched Polyethylene with Carbazole Functionalities”

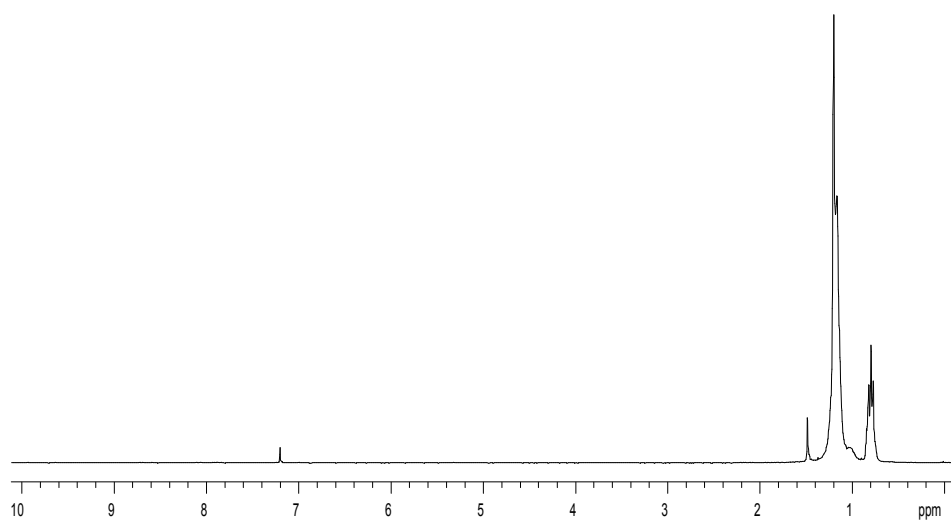
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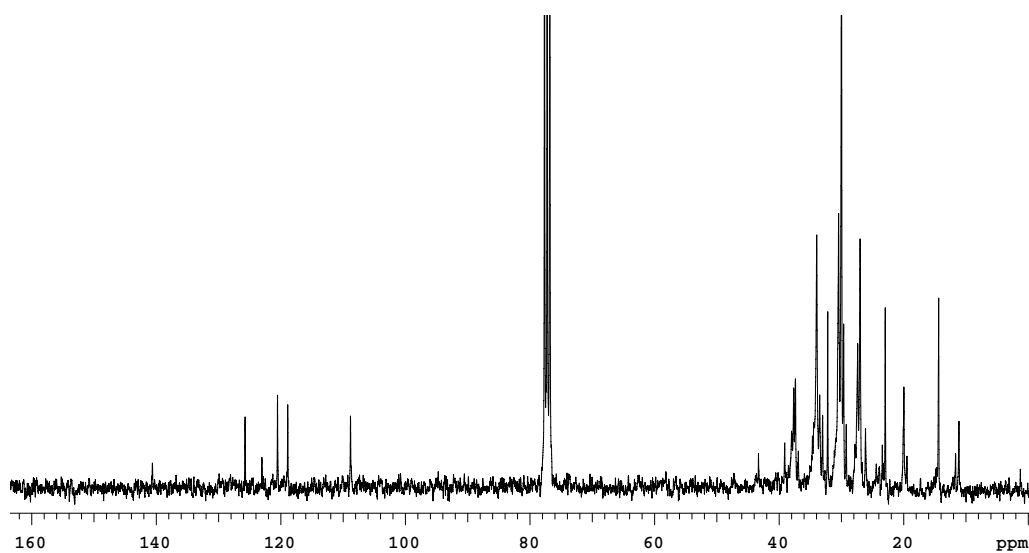
**Figure S-1a.**  $^1\text{H}$  NMR spectrum of **2**. [500 MHz,  $\text{CD}_2\text{Cl}_2$  solvent,  $23^\circ\text{C}$ ]



**Figure S-1b.**  $^{13}\text{C}\{^1\text{H}\}$  NMR spectrum of **2**. [126 MHz,  $\text{CD}_2\text{Cl}_2$  solvent,  $23^\circ\text{C}$ ]



**Figure S-2.**  $^1\text{H}$  NMR spectrum of the polymer produced in the attempted copolymerization of ethylene and *N*-allyl carbazole (NAC), using **5** as catalyst at 5 bar ethene,  $\text{CH}_2\text{Cl}_2$  solvent, 1.1 M NAC,  $50^\circ\text{C}$ . No NAC incorporation is visible. [500 MHz,  $\text{CDCl}_3$  solvent,  $23^\circ\text{C}$ ]



**Figure S-3.**  $^{13}\text{C}\{^1\text{H}\}$  NMR spectrum of the ethylene/*N*-pentenylcarbazole (NPC) copolymer with 18.8 wt% incorporated comonomer. [75 MHz,  $\text{CDCl}_3$  solvent,  $23^\circ\text{C}$ ].

**Table S-1.** Crystallographic data for complex **1** and **2**.

Compound	<b>1</b>	<b>2</b>
Formula	C <sub>66</sub> H <sub>66</sub> N <sub>3</sub> BF <sub>24</sub> Pd	C <sub>78</sub> H <sub>71</sub> N <sub>3</sub> BF <sub>24</sub> Pd
FW	1474.46	1623.61
Crystal system	monoclinic	monoclinic
Space group	<i>C2/c</i>	<i>P2<sub>1</sub>/n</i>
<i>a</i> (Å)	41.414(2)	12.8846(6)
<i>b</i> (Å)	12.7965(5)	15.7270(7)
<i>c</i> (Å)	26.010(1)	36.571(2)
β (deg)	103.000(1)	91.951(1)
<i>V</i> (Å <sup>3</sup> )	13430.8(10)	7406.3(6)
θ-range (deg)	2.20-20.53	2.26-24.27
<i>Z</i>	8	4
ρ <sub>calc</sub> (g.cm <sup>-3</sup> )	1.458	1.456
<i>F</i> (000)	6000	3308
μ(Mo <i>K</i> α), cm <sup>-1</sup>	3.85	3.57
Temp (K)	100(1)	100(1)
Reflections	11866	15141
Parameters	907	1003
<i>wR</i> ( <i>F</i> <sup>2</sup> )	0.1664	0.2061
Weighting ( <i>a</i> , <i>b</i> )	0.0644, 65.10	0.0926, 20.0630
<i>R</i> ( <i>F</i> )	0.0618	0.0762
GooF	1.028	1.057