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2017.12.05

CN 107892674 A

2018.04.10

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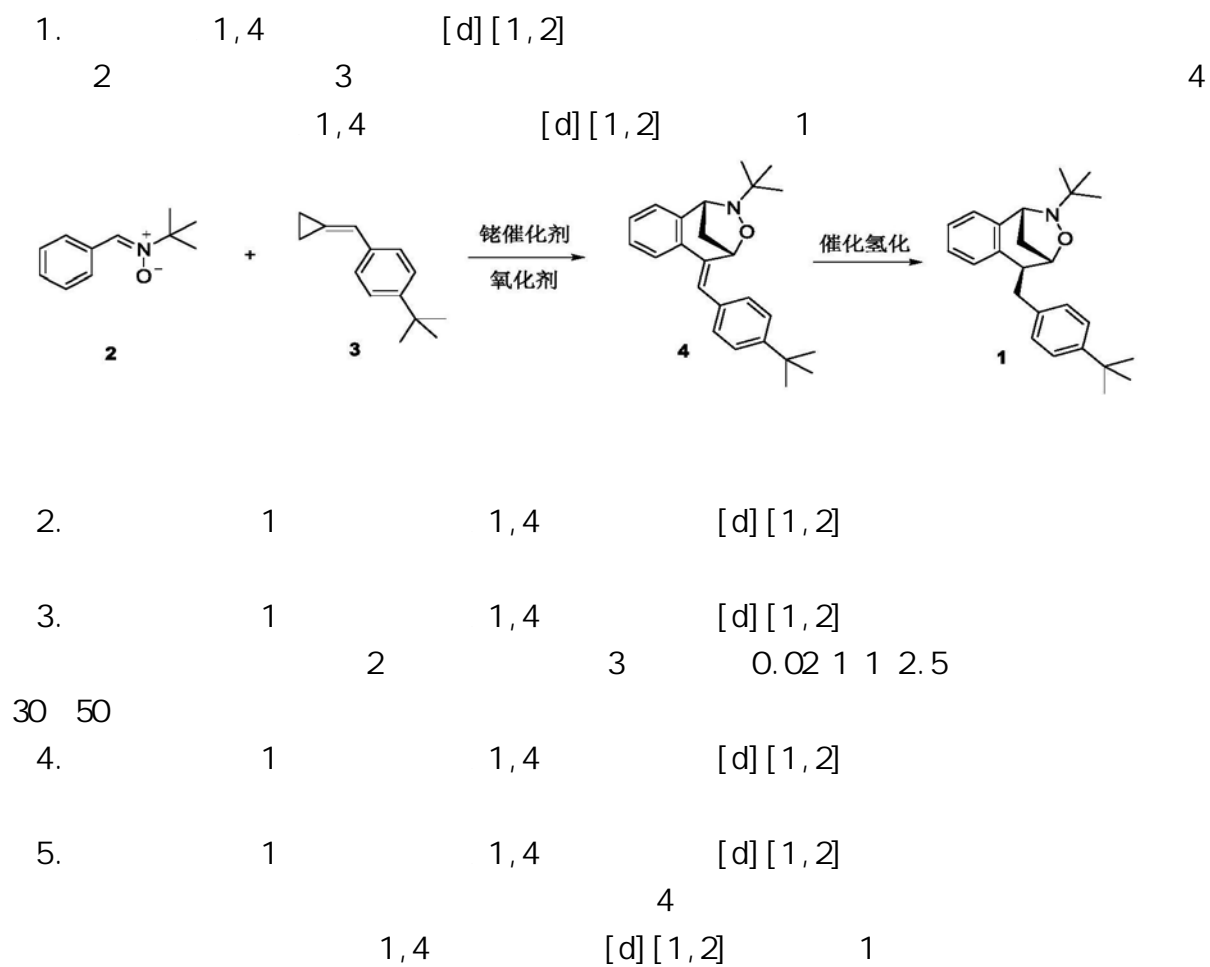
46

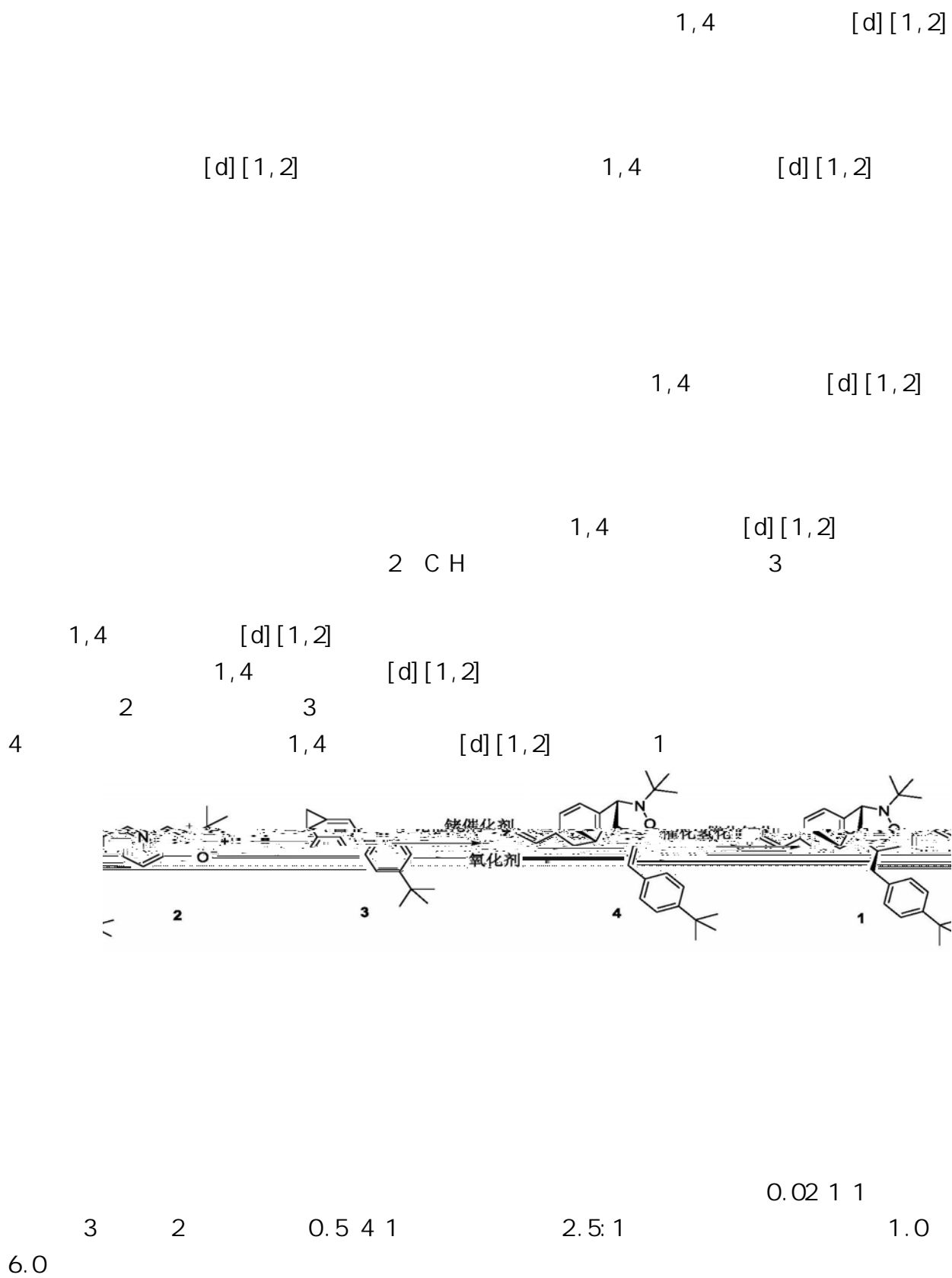
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CN 101693712 A, 2010.04.14
Fang, Xi e et al. Nitroene Directing
Groups in Rhodium(I





O 100

30 50

0.1 2.0

4

1,4

[d] [1,2]

1

1)

1,4

[d] [1,2]

1

2)

1

Cp* Rh(OAc)₂ (7.0mg, 0.010mmol, 0.050equiv), AgOAc (80mg, 0.500mmol, 2.50equiv) 25mL 1mL CF₃CH₂OH 10
 2(0.200mmol, 1.00equiv) 3(0.500mmol, 2.50equiv)
 40 24h 15mL

4 84 ¹H NMR ¹³C NMR 95

¹H NMR(400MHz, CDCl₃) 7.80(d, J 7.8Hz, 1H), 7.44(s, 4H), 7.29(s, 1H), 7.25(t, J 7.6Hz, 1H), 7.18(t, J 7.3Hz, 1H), 7.09(d, J 7.3Hz, 1H), 5.46(d, J 5.5Hz, 1H), 4.31(d, J 4.9Hz, 1H), 2.33(s, 1H), 2.02(t, J 10.2Hz, 1H), 1.35(s, 9H), 1.18(s, 9H). ¹³C NMR(101MHz, CDCl₃) 150.1, 142.4, 136.9, 134.0, 132.8, 129.4, 127.6, 127.5, 125.9, 125.3, 124.7, 123.7, 73.3, 59.7, 58.8, 37.9, 34.6, 31.4, 26.8. HRMS(ESI, m/z): C₂₅H₃₂NO[M-H]⁺: 362.2478, : 362.2480.

4(40mg)

2mL

5mg 5 Pd/C

(TLC)

(PE: EA 10: 1)

1 52

¹H NMR

(400MHz, CDCl₃) 7.35(m 5H), 7.23(dt, J 7.5, 1.2Hz, 1H), 7.12(t, J 7.4Hz, 1H), 7.04(d, J 7.3Hz, 1H), 4.39(dd, J 5.9, 2.9Hz, 1H), 4.22(d, J 5.0Hz, 1H), 3.24 2.97(m 3H), 2.39 2.28(m 1H), 1.85(d, J 11.0Hz, 1H), 1.34(s, 9H), 1.18(s, 9H). ¹³C NMR(101MHz, CDCl₃) 148.7, 142.6, 138.2, 137.5, 129.4, 129.0, 127.6, 126.0, 125.3, 125.2, 73.4, 58.9, 58.8, 48.7, 38.0, 37.2, 34.4, 31.5, 26.8. HRMS(ESI, m/z): calcd for C₂₅H₃₄NO[M-H]⁺: 364.2635, found 364.2628.

2

Cp*Rh(OAc)₂ (7.0mg, 0.010mmol, 0.050equiv), AgNO₂ (85mg, 0.500mmol, 2.50equiv) 25mL 1mL CF₃CH₂OH 10

2(0.200mmol, 1.00equiv) 3(0.500mmol, 2.50equiv)

50 24h, 15mL

4 85 ¹H NMR ¹³C NMR 95

¹H NMR(400MHz, CDCl₃) 7.80(d, J 7.8Hz, 1H), 7.44(s, 4H), 7.29(s, 1H), 7.25(t, J 7.6Hz, 1H), 7.18(t, J 7.3Hz, 1H), 7.09(d, J 7.3Hz, 1H), 5.46(d, J 5.5Hz, 1H), 4.31(d, J 4.9Hz, 1H), 2.33(s, 1H), 2.02(t, J 10.2Hz, 1H), 1.35(s, 9H), 1.18(s, 9H). ¹³C NMR (101MHz, CDCl₃) 150.1, 142.4, 136.9, 134.0, 132.8, 129.4, 127.6, 127.5, 125.9, 125.3, 124.7, 123.7, 73.3, 59.7, 58.8, 37.9, 34.6, 31.4, 26.8. HRMS(ESI, m/z): C₂₅H₂NO[M-H]⁺: 362.2478, : 362.2480.

4(40mg) 2mL 4mg 10 Pd/C

(TLC)

(PE: EA 10:1) 1 59 ¹H NMR(400MHz, CDCl₃) 7.35(m 5H), 7.23(dt, J 7.5, 1.2Hz, 1H), 7.12(t, J 7.4Hz, 1H), 7.04(d, J 7.3Hz, 1H), 4.39(dd, J 5.9, 2.9Hz, 1H), 4.22(d, J 5.0Hz, 1H), 3.24 2.97(m 3H), 2.39 2.28(m 1H), 1.85(d, J 11.0Hz, 1H), 1.34(s, 9H), 1.18(s, 9H). ¹³C NMR(101MHz, CDCl₃) 148.7, 142.6, 138.2, 137.5, 129.4, 129.0, 127.6, 126.0, 125.3, 125.2, 73.4, 58.9, 58.8, 48.7, 38.0, 37.2, 34.4, 31.5, 26.8. HRMS(ESI, m/z): calcd for C₂₅H₃NO[M-H]⁺: 364.2635, found 364.2628.

3

Cp*Rh(OAc)₂ (7.0mg, 0.010mmol, 0.050equiv), Ag₂CO₃ (55mg, 0.200mmol, 1.00equiv) 25mL 1mL CF₃CH₂OH 10

2(0.200mmol, 1.00equiv) 3(0.500mmol, 2.50equiv)

30 24h, 15mL

4 81 ¹H NMR ¹³C NMR 95

¹H NMR(400MHz, CDCl₃) 7.80(d, J 7.8Hz, 1H), 7.44(s, 4H), 7.29(s, 1H), 7.25(t, J 7.6Hz, 1H), 7.18(t, J 7.3Hz, 1H), 7.09(d, J 7.3Hz, 1H), 5.46(d, J 5.5Hz, 1H), 4.31(d, J 4.9Hz, 1H), 2.33(s, 1H), 2.02(t, J 10.2Hz, 1H), 1.35(s, 9H), 1.18(s, 9H). ¹³C NMR (101MHz, CDCl₃) 150.1, 142.4, 136.9, 134.0, 132.8, 129.4, 127.6, 127.5, 125.9, 125.3, 124.7, 123.7, 73.3, 59.7, 58.8, 37.9, 34.6, 31.4, 26.8. HRMS(ESI, m/z): C₂₅H₂NO[M-H]⁺: 362.2478, : 362.2480.

4(40mg) 2mL 5mg 5 Pd/C

(TLC)

(PE: EA 10:1) 1 57 ¹H NMR(400MHz, CDCl₃) 7.35(m 5H), 7.23(dt, J 7.5, 1.2Hz, 1H), 7.12(t, J 7.4Hz, 1H), 7.04(d, J 7.3Hz, 1H), 4.39(dd, J 5.9, 2.9Hz, 1H), 4.22(d, J 5.0Hz, 1H), 3.24 2.97(m 3H), 2.39 2.28(m 1H), 1.85(d, J 11.0Hz, 1H), 1.34(s, 9H), 1.18(s, 9H). ¹³C NMR(101MHz, CDCl₃) 148.7, 142.6, 138.2,

137.5, 129.4, 129.0, 127.6, 126.0, 125.3, 125.2, 73.4, 58.9, 58.8, 48.7, 38.0, 37.2, 34.4, 31.5, 26.8. HRMS (ESI, m/z): calcd for $C_{25}H_{34}NO$ $[MH]^+$: 364.2635, found 364.2628.