Electronic Supplementary Information for

Surface Grafted Agents with Various Molecular Length and Photochemically Active Benzophenone Moiety

by Gaby Nordendorf,[a] Samuel L. Schafforz,[a] Eireen B. Käkel,[b] Shunyi Miao [a] and Alexander Lorenz *[a]

[a] *Department of Chemistry, Paderborn University, Warburger Str. 100, 33098 Paderborn, Germany. E-mail: alexander.lorenz@uni-paderborn.de*
[b] *Institute of Chemistry, University of Kassel, Heinrich-Plett-Str. 40, 34132 Kassel, Germany.*

NMR data for *n*-ENE

3-ENE: ^{1}H NMR (500 MHz, $CDCl_3$, □ in ppm): 4.63 (m, 2H, O-CH_2), 5.34 (m, 1H, CH_2=CH_2), 5.45 (m, 1H, CH_2=CH_2), 6.07 (m, 1H, CH_2=CH_2), 6.98-7.82 (various m, 9H, C-$H_{arom.}$)

4-ENE: ^{1}H NMR (500 MHz, $CDCl_3$, □ in ppm): 2.59 (m, 2H, CH_2-CH_2), 4.10 (m, 2H, O-CH_2), 5.14 (m, 1H, CH_2=CH_2), 5.19 (m, 1H, CH_2=CH_2), 5.92 (m, 1H, CH_2=CH_2), 6.98-7.82 (various m, 9H, C-$H_{arom.}$)

5-ENE: ^{1}H NMR (500 MHz, $CDCl_3$, □ in ppm): 1.84 (m, 2H, CH_2-CH_2), 2.26 (m, 2H, CH_2-CH_2), 4.05 (m, 2H, O-CH_2), 5.03 (m, 1H, CH_2=CH_2), 5.08 (m, 1H, CH_2=CH_2), 5.86 (m, 1H, CH_2=CH_2), 6.96-7.82 (various m, 9H, C-$H_{arom.}$)

6-ENE: ^{1}H NMR (500 MHz, $CDCl_3$, □ in ppm): 1.60 (m, 2H, CH_2-CH_2), 1.92 (m, 2H, CH_2-CH_2), 2.15 (m, 2H, CH_2-CH_2), 4.05 (m, 2H, O-CH_2), 4.98 (m, 1H, CH_2=CH_2), 5.05 (m, 1H, CH_2=CH_2), 5.83 (m, 1H, CH_2=CH_2), 6.95-7.82 (various m, 9H, C-$H_{arom.}$)

7-ENE: ^{1}H NMR (500 MHz, $CDCl_3$, □ in ppm): 1.49 (m, 4H, CH_2-CH_2), 1.83 (m, 2H, CH_2-CH_2), 2.10 (m, 2H, CH_2-CH_2), 4.04 (m, 2H, O-CH_2), 4.96 (m, 1H, CH_2=CH_2), 5.03 (m, 1H, CH_2=CH_2), 5.82 (m, 1H, CH_2=CH_2), 6.95-7.82 (various m, 9H, C-$H_{arom.}$)

8-ENE: ^{1}H NMR (500 MHz, $CDCl_3$, □ in ppm): 1.37-1.51 (m, 6H, CH_2-CH_2), 1.82 (m, 2H, CH_2-CH_2), 2.07 (m, 2H, CH_2-CH_2), 4.04 (m, 2H, O-CH_2), 4.95 (m, 1H, CH_2=CH_2), 5.01 (m, 1H, CH_2=CH_2), 5.82 (m, 1H, CH_2=CH_2), 6.95-7.82 (various m, 9H, C-$H_{arom.}$)

9-ENE: ^{1}H NMR (500 MHz, $CDCl_3$, □ in ppm): 1.30-1.51 (m, 8H, CH_2-CH_2), 1.82 (m, 2H, CH_2-CH_2), 2.06 (m, 2H, CH_2-CH_2), 4.04 (m, 2H, O-CH_2), 4.94 (m, 1H, CH_2=CH_2), 5.01 (m, 1H, CH_2=CH_2), 5.82 (m, 1H, CH_2=CH_2), 6.95-7.82 (various m, 9H, C-$H_{arom.}$)

10-ENE: ^{1}H NMR (500 MHz, $CDCl_3$, □ in ppm): 1.28-1.43 (m, 8H, CH_2-CH_2), 1.48 (m, 2H, CH_2-CH_2), 1.81 (m, 2H, CH_2-CH_2), 2.06 (m, 2H, CH_2-CH_2), 4.04 (m, 2H, O-CH_2), 4.94 (m, 1H, CH_2=CH_2), 5.00 (m, 1H, CH_2=CH_2), 5.82 (m, 1H, CH_2=CH_2), 6.95-7.82 (various m, 9H, C-$H_{arom.}$)

11-ENE: ^{1}H NMR (500 MHz, $CDCl_3$, □ in ppm): 1.27-1.42 (m, 10H, CH_2-CH_2), 1.47 (m, 2H, CH_2-CH_2), 1.82 (m, 2H, CH_2-CH_2), 2.05 (m, 2H, CH_2-CH_2), 4.04 (m, 2H, O-CH_2), 4.93 (m, 1H, CH_2=CH_2), 5.00 (m, 1H, CH_2=CH_2), 5.82 (m, 1H, CH_2=CH_2), 6.95-7.82 (various m, 9H, C-$H_{arom.}$)

12-ENE: ^{1}H NMR (500 MHz, $CDCl_3$, □ in ppm): 1.28-1.41 (m, 12H, CH_2-CH_2), 1.47 (m, 2H, CH_2-CH_2), 1.82 (m, 2H, CH_2-CH_2), 2.05 (m, 2H, CH_2-CH_2), 4.03 (m, 2H, O-CH_2), 4.93 (m, 1H, CH_2=CH_2), 5.00 (m, 1H, CH_2=CH_2), 5.82 (m, 1H, CH_2=CH_2), 6.95-7.82 (various m, 9H, C-$H_{arom.}$)

NMR data for *n*-BPS

3-BPS: ^{1}H NMR (500 MHz, $CDCl_3$, □ in ppm): 0.04-0.17 and 0.47 (m, 6H, Si-CH_3), 0.67 (m, 2H, Si-CH_2), 1.85 (m, 2H, CH_2-CH_2-CH_2), 4.00 (m, 2H, O-CH_2), 6.94-7.81 (various m, 9H, C-$H_{arom.}$)

4-BPS: ^{1}H NMR (500 MHz, $CDCl_3$, □ in ppm): 0.01-0.20 and 0.41-0.45 (m, 6H, Si-CH_3), 0.60 (m, 2H, Si-CH_2), 1.53 (m, 2H, CH_2-CH_2-CH_2), 1.84 (m, 2H, CH_2-CH_2-CH_2), 4.04 (m, 2H, O-CH_2), 6.94-7.81 (various m, 9H, C-$H_{arom.}$)

5-BPS: ^{1}H NMR (500 MHz, $CDCl_3$, □ in ppm): 0.01-0.11 and 0.42 (m, 6H, Si-CH_3), 0.51-0.63 (m, 2H, Si-CH_2), 1.36-1.58 (m, 4H, CH_2-CH_2-CH_2), 1.83 (m, 2H, CH_2-CH_2-CH_2), 4.04 (m, 2H, O-CH_2), 6.94-7.81 (various m, 9H, C-$H_{arom.}$)

6-BPS: ^{1}H NMR (500 MHz, $CDCl_3$, □ in ppm): 0.01-0.09 and 0.41 (m, 6H, Si-CH_3), 0.53 (m, 2H, Si-CH_2), 1.30-1.52 (m, 6H, CH_2-CH_2-CH_2), 1.82 (m, 2H, CH_2-CH_2-CH_2), 4.04 (m, 2H, O-CH_2), 6.94-7.81 (various m, 9H, C-$H_{arom.}$)

7-BPS: ^{1}H NMR (500 MHz, $CDCl_3$, □ in ppm): 0.02-0.10 and 0.41 (m, 6H, Si-CH_3), 0.52 (m, 2H, Si-CH_2), 1.30-1.52 (m, 8H, CH_2-CH_2-CH_2), 1.82 (m, 2H, CH_2-CH_2-CH_2), 4.04 (m, 2H, O-CH_2), 6.94-7.81 (various m, 9H, C-$H_{arom.}$)

8-BPS: ^{1}H NMR (500 MHz, $CDCl_3$, □ in ppm): 0.01-0.10 and 0.40 (m, 6H, Si-CH_3), 0.52 (m, 2H, Si-CH_2), 1.30-1.51 (m, 10H, CH_2-CH_2-CH_2), 1.81 (m, 2H, CH_2-CH_2-CH_2), 4.03 (m, 2H, O-CH_2), 6.94-7.81 (various m, 9H, C-$H_{arom.}$)

9-BPS: ^{1}H NMR (500 MHz, $CDCl_3$, □ in ppm): 0.01-0.08 and 0.40 (m, 6H, Si-CH_3), 0.51 (m, 2H, Si-CH_2), 1.25-1.40 (m, 10H, CH_2-CH_2-CH_2), 1.47 (m, 2H, CH_2-CH_2-CH_2), 1.81 (m, 2H, CH_2-CH_2-CH_2), 4.03 (m, 2H, O-CH_2), 6.94-7.81 (various m, 9H, C-$H_{arom.}$)

10-BPS: ^{1}H NMR (500 MHz, $CDCl_3$, □ in ppm): 0.01-0.10 and 0.40 (m, 6H, Si-CH_3), 0.50 (m, 2H, Si-CH_2), 1.25-1.40 (m, 12H, CH_2-CH_2-CH_2), 1.47 (m, 2H, CH_2-CH_2-CH_2), 1.81 (m, 2H, CH_2-CH_2-CH_2), 4.03 (m, 2H, O-CH_2), 6.94-7.81 (various m, 9H, C-$H_{arom.}$)

11-BPS: ^{1}H NMR (500 MHz, $CDCl_3$, □ in ppm): 0.01-0.09 and 0.40 (m, 6H, Si-CH_3), 0.49 (m, 2H, Si-CH_2), 1.25-1.40 (m, 14H, CH_2-CH_2-CH_2), 1.47 (m, 2H, CH_2-CH_2-CH_2), 1.81 (m, 2H, CH_2-CH_2-CH_2), 4.03 (m, 2H, O-CH_2), 6.94-7.81 (various m, 9H, C-$H_{arom.}$)

12-BPS: ^{1}H NMR (500 MHz, $CDCl_3$, □ in ppm): 0.01-0.10 (m, 6H, Si-CH_3), 0.50 (m, 2H, Si-CH_2), 1.24-1.39 (m, 16H, CH_2-CH_2-CH_2), 1.47 (m, 2H, CH_2-CH_2-CH_2), 1.81 (m, 2H, CH_2-CH_2-CH_2), 4.03 (m, 2H, O-CH_2), 6.94-7.81 (various m, 9H, C-$H_{arom.}$)