Electronic Supplementary Material (ESI) for Organic & Biomolecular Chemistry.

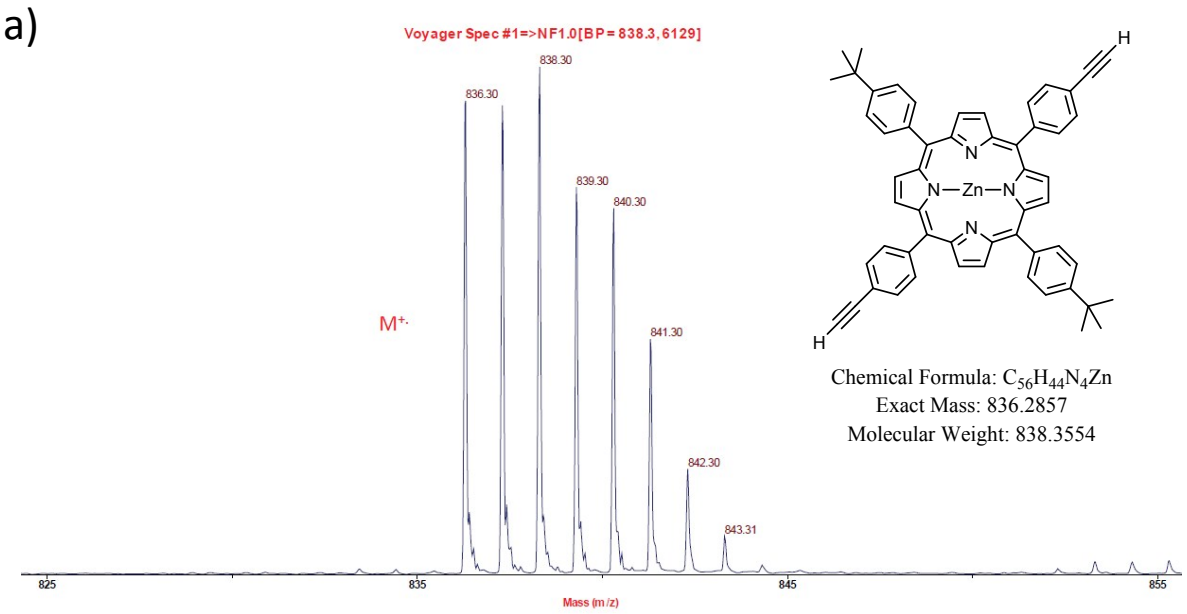

# Grafting of Porphyrin Oligomers on Single-Walled Carbon Nanotubes by *Hay* Coupling

Ismail Hijazi,[a] Khaoula Khedhiri[a] and Stéphane Campidelli*[a]

[a]LICSEN, NIMBE, CEA, CNRS, Université Paris-Saclay, CEA Saclay 91191 Gif-sur-Yvette Cedex, France.

E-mail: stephane.campidelli@cea.fr

NMR and mass spectra of porphyrin **3** and **4**.



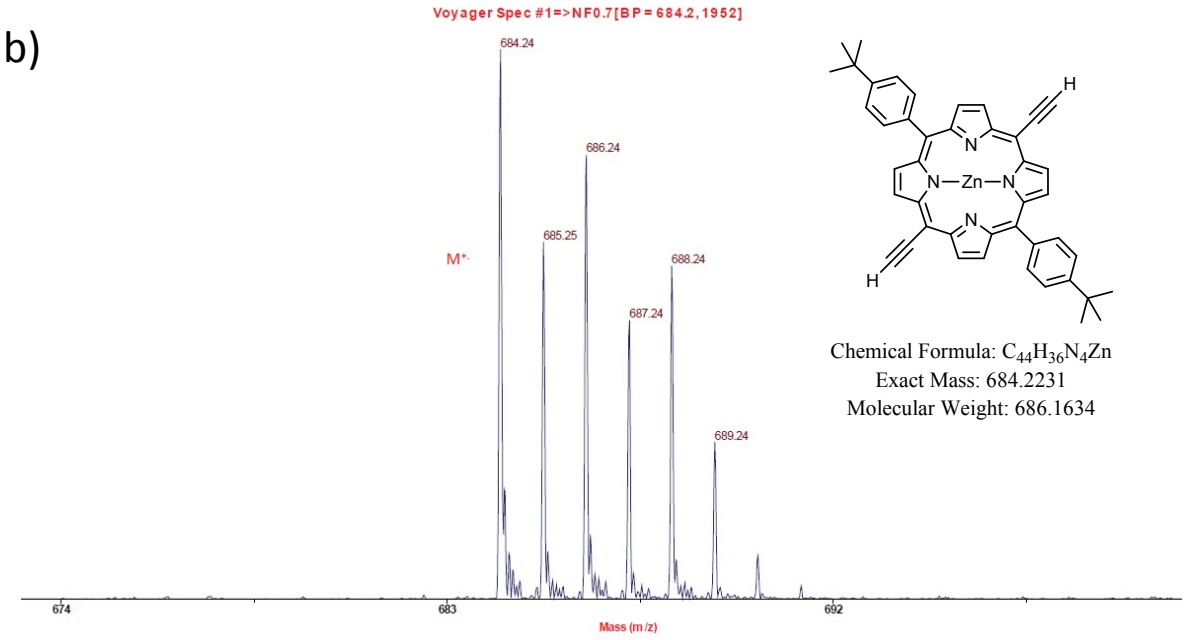




**Fig. S1** MALDI-TOF mass spectra of a) Zn-porphyrin **3** and b) Zn-porphyrin **4**.

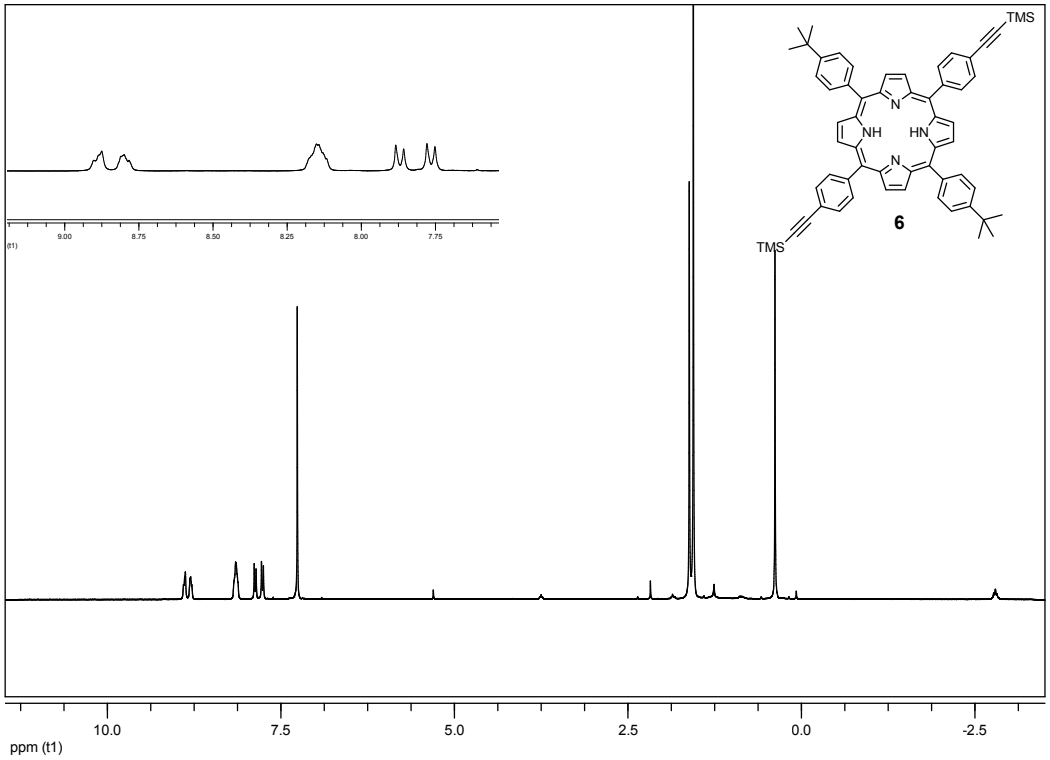



**Fig. S2** $^{1}$H NMR spectrum of free-base porphyrin **6** in $CDCl_3$.

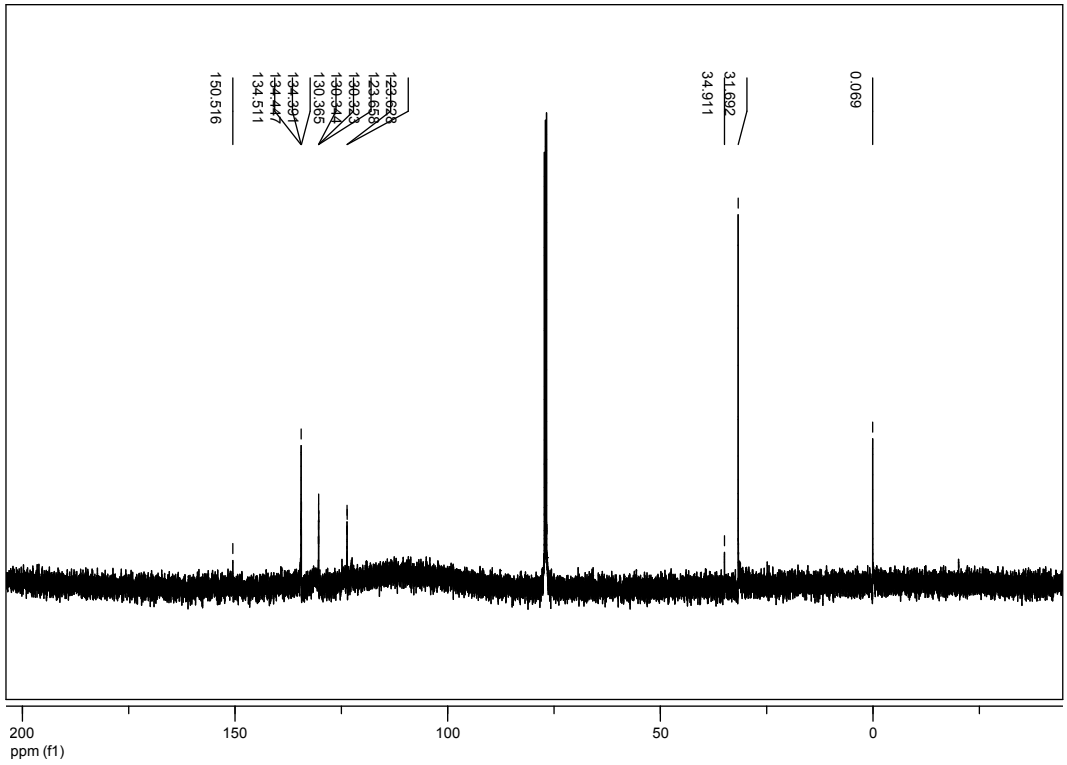



**Fig. S3** $^{13}$C NMR spectrum of free-base porphyrin **6** in $CDCl_3$.

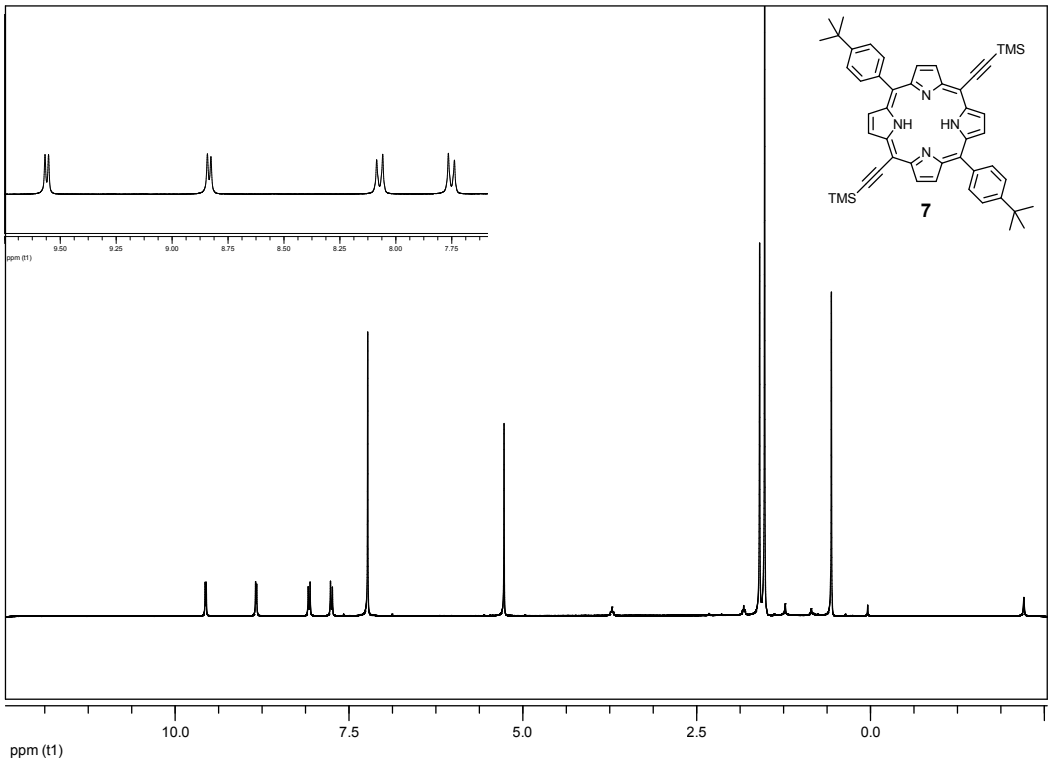



**Fig. S4** $^{1}$H NMR spectrum of free-base porphyrin **7** in $CDCl_3$.

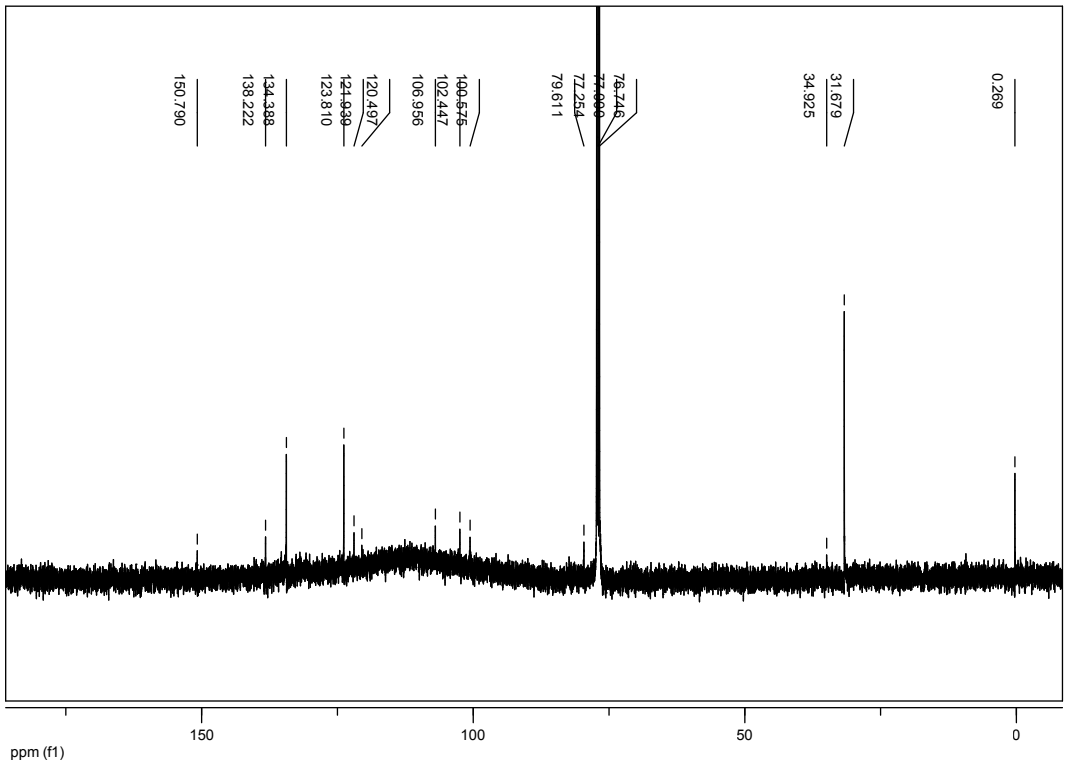



**Fig. S5** $^{13}$C NMR spectrum of free-base porphyrin **7** in $CDCl_3$.

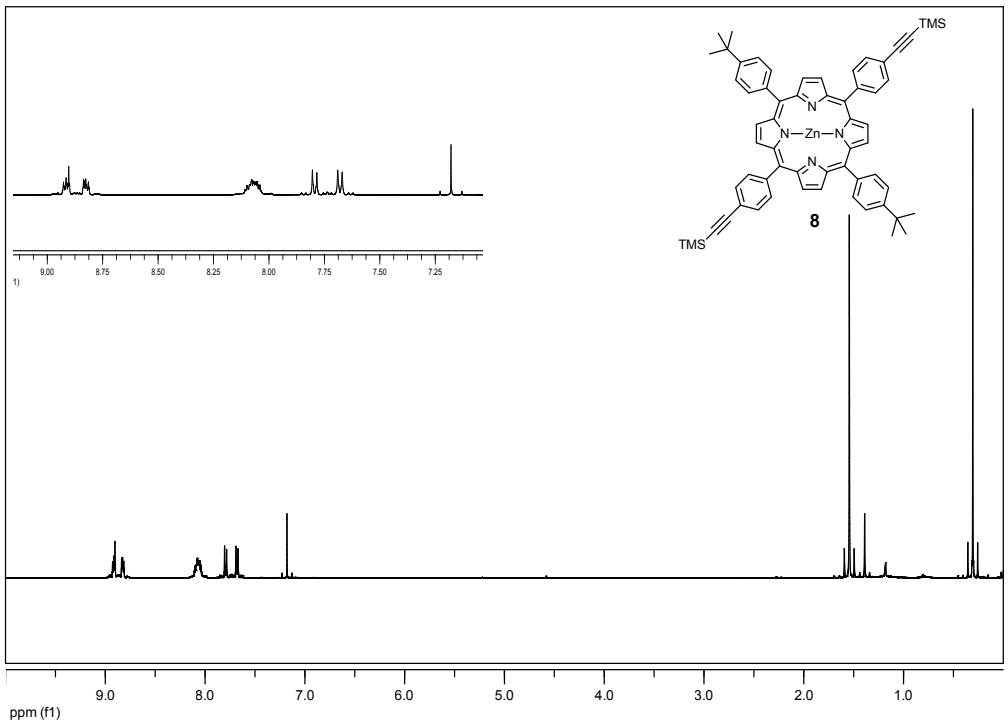



**Fig. S6** $^{1}$H NMR spectrum of zinc porphyrin **8** in $CDCl_3$.

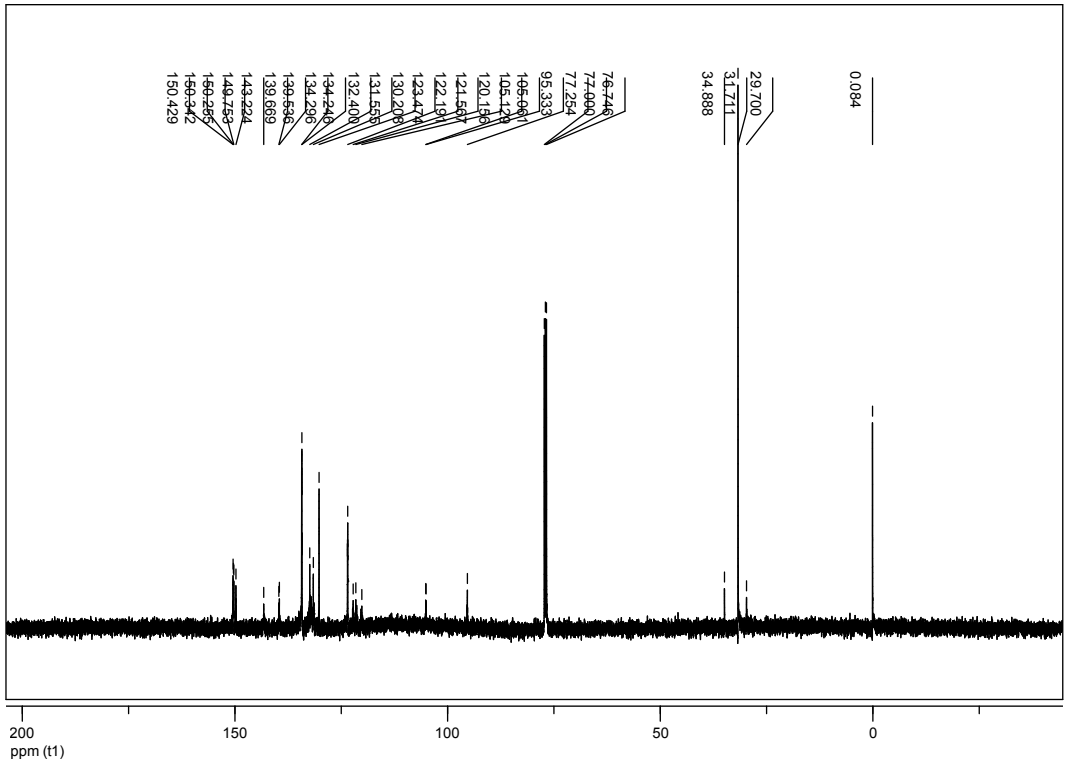



**Fig. S7** $^{13}$C NMR spectrum of zinc porphyrin **8** in $CDCl_3$.

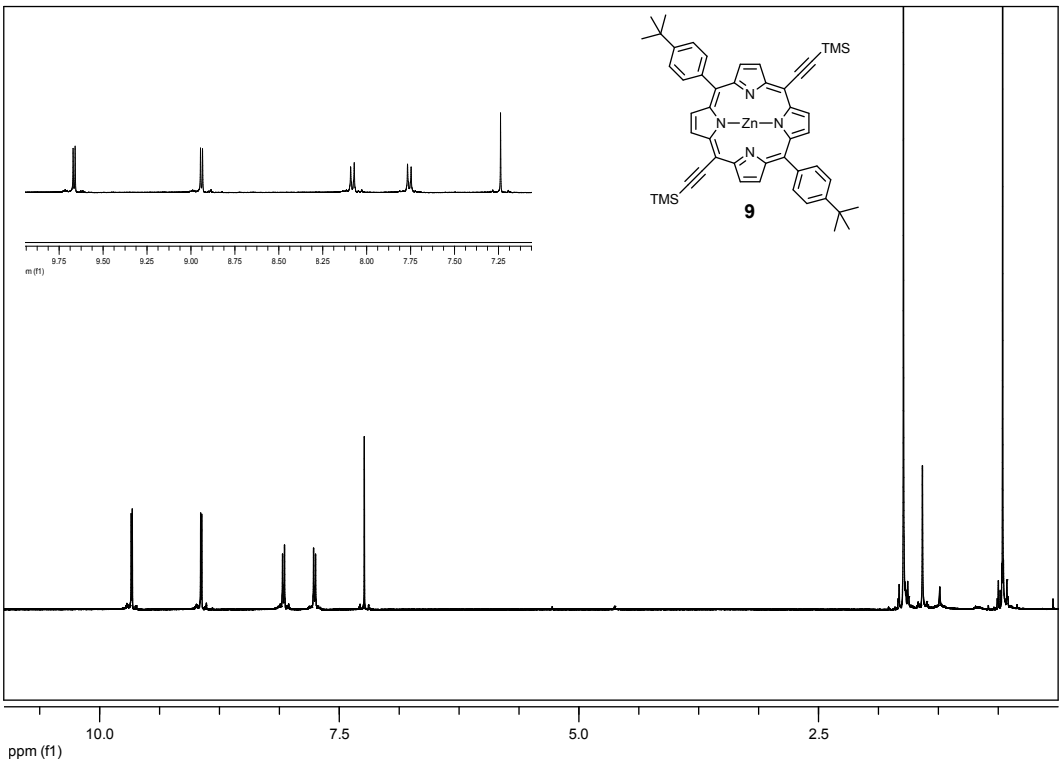



**Fig. S8** $^{1}$H NMR spectrum of zinc porphyrin **9** in $CDCl_3$.

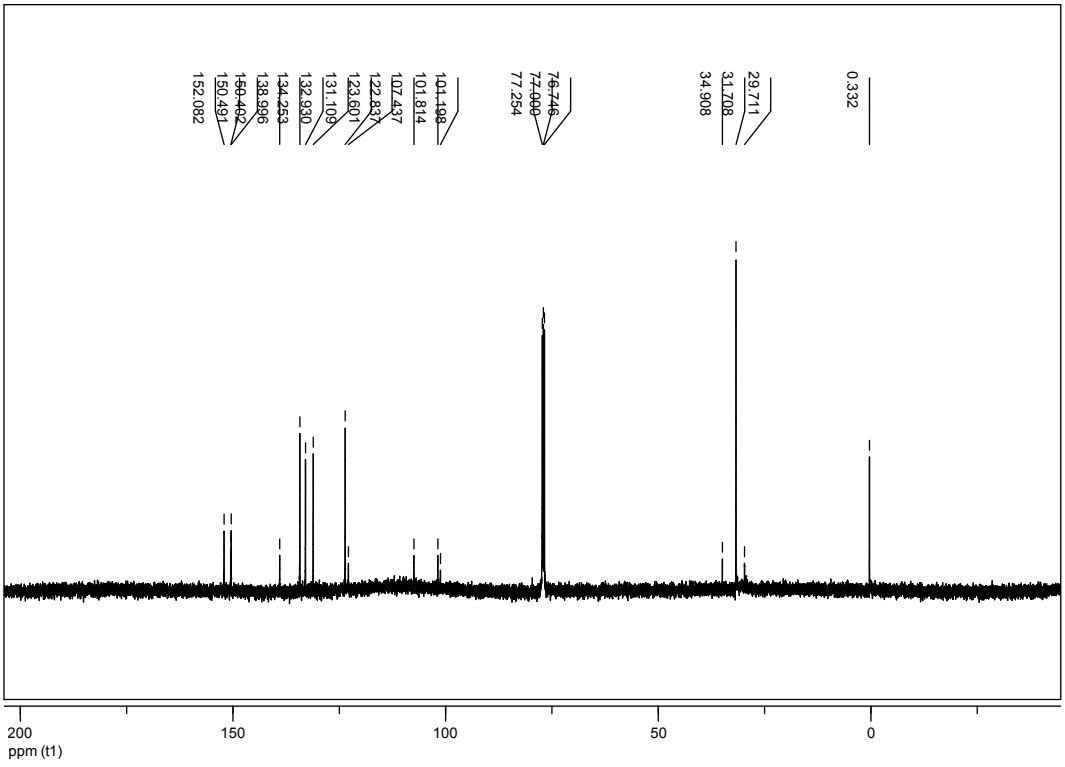



**Fig. S9** $^{13}$C NMR spectrum of zinc porphyrin **9** in $CDCl_3$.

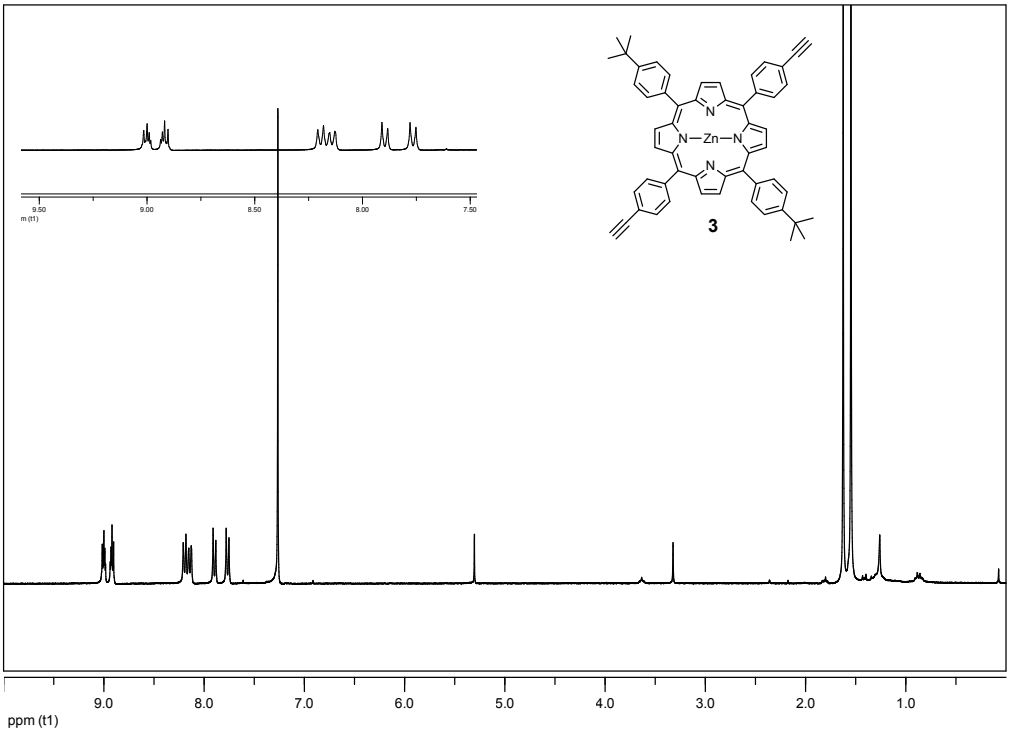



**Fig. S10** $^{1}$H NMR spectrum of zinc porphyrin **3** in $CDCl_3$.

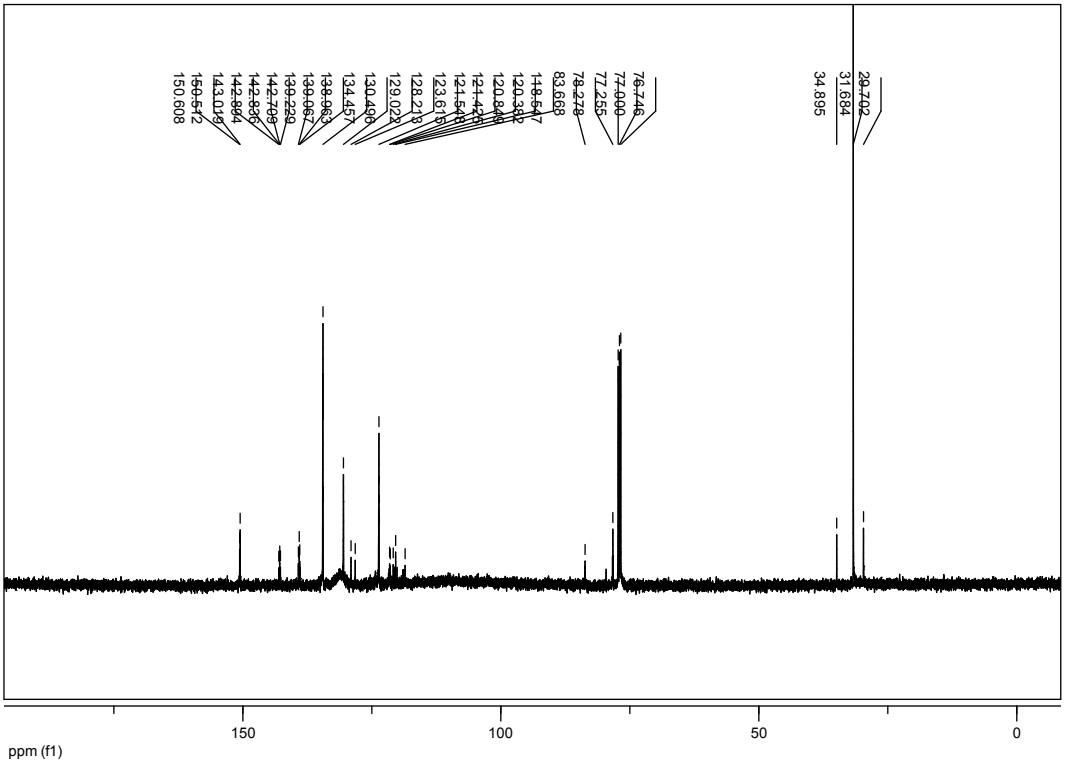



**Fig. S11** $^{13}$C NMR spectrum of zinc porphyrin **3** in $CDCl_3$.

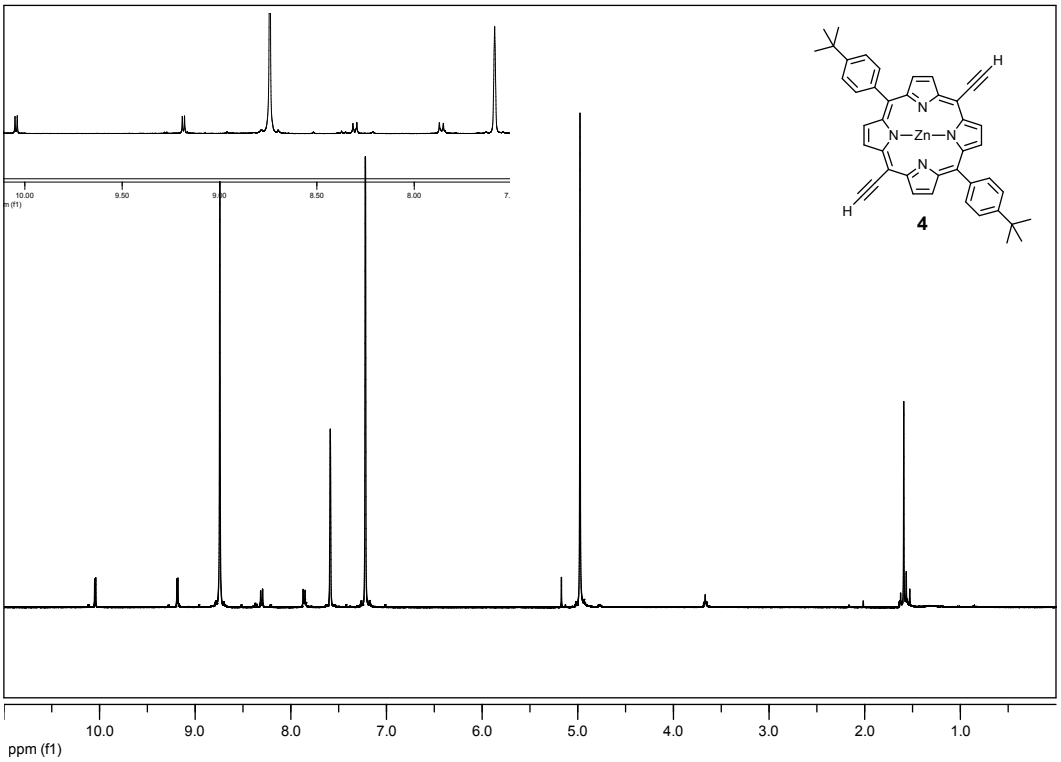



**Fig. S12** $^{1}$H NMR spectrum of zinc porphyrin **4** in pyridine-d5.

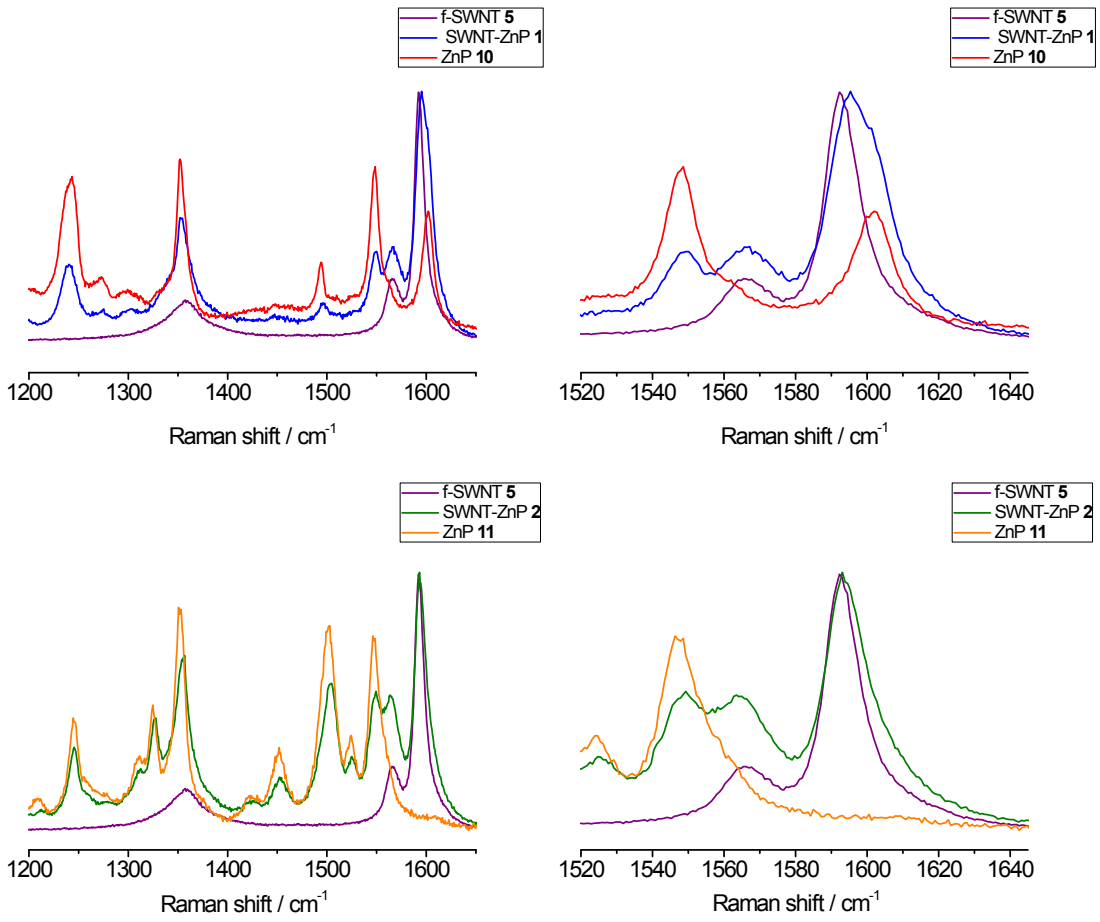



**Fig. S13** Enlargement of the Raman spectra of *f*-SWNT **5**, **SWNT-ZnP 1**, **SWNT-ZnP 2**, ZnP **10** and ZnP **11**. On the left part, the spectra show that the D-bands of SWNT-ZnP **1** and SWNT-ZnP **2** are hidden by the signal of the porphyrin oligomers. On the right part, the spectra show no significant doping effect of the porphyrin oligomer on the G-band for **SWNT-ZnP 2** compared to *f*-SWNT **5** (shift of 1 $cm^{-1}$). For **SWNT-ZnP 1** (top right), an apparent shift of 3 $cm^{-1}$ is observed; this shift is likely due to the presence of a peak arising from the porphyrin oligomer **SWNT-ZnP 1**.