

Covalent Immobilization of dysprosium-based metal–organic chains on Silicon-based Polymer Brushes Surfaces

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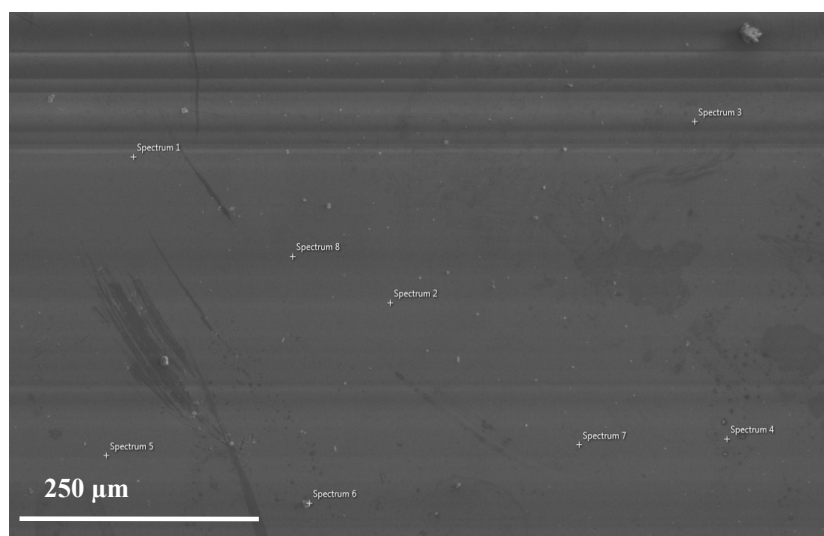


Figure S1. Representative scanning electron microscopy (SEM) image of a PAA-NH₂ modified silicon wafer after grafting of [DyNa(ampy)₄]_n (**1**).

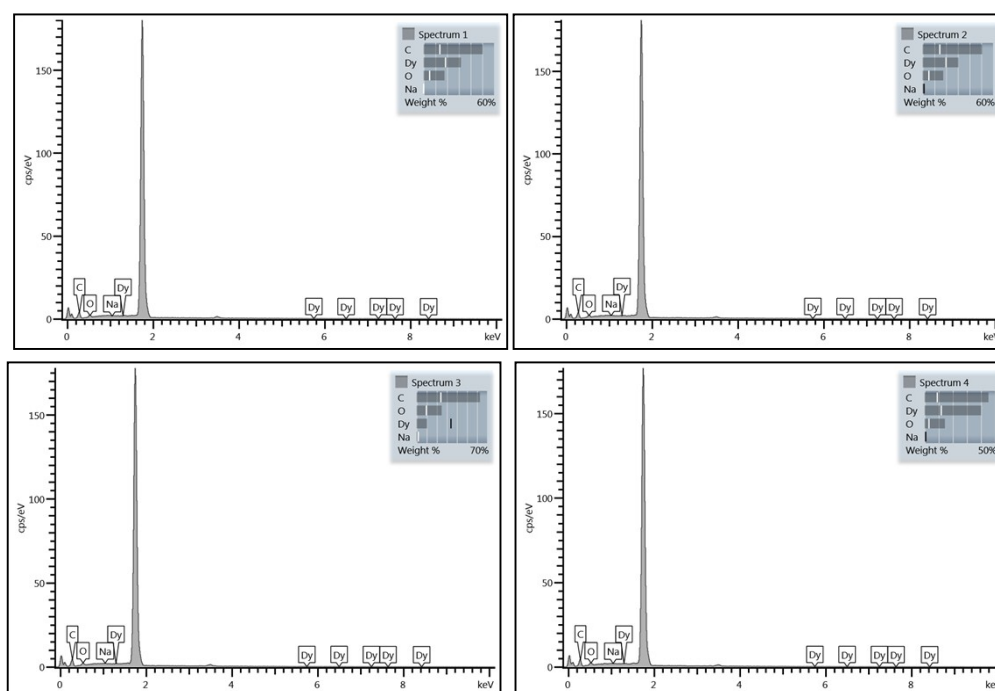


Figure S2. Energy dispersive X-ray spectroscopy (EDS) spectra of the metal-organic chain [DyNa(ampy)₄]_n (**1**) for several regions.

Table S1. Chemical composition (in %) obtained from EDS analysis for C, O, N, Si, Na and Dy corresponding to the points shown in Figure S1.

	C	O	N	Si	Na	Dy
Spectrum 1	48,74	32,23	2,85	7,02	3,27	5,9
Spectrum 2	48,19	35,41	2,91	6,14	3,74	3,61
Spectrum 3	47,07	36,94	3,06	6,21	2,27	4,45
Spectrum 4	40,71	39,84	2,91	7,43	3,6	5,51
Spectrum 5	46,1	34,83	3,43	8,19	2,96	4,49
Spectrum 6	44,68	37,11	2,51	9,54	2,23	3,93
Spectrum 7	47,41	38,72	3,21	6,34	2,83	3,49
Spectrum 8	43,68	38,93	3,71	7,98	2,63	3,07
Average	45,82	36,75	3,07	7,35	2,94	4,3

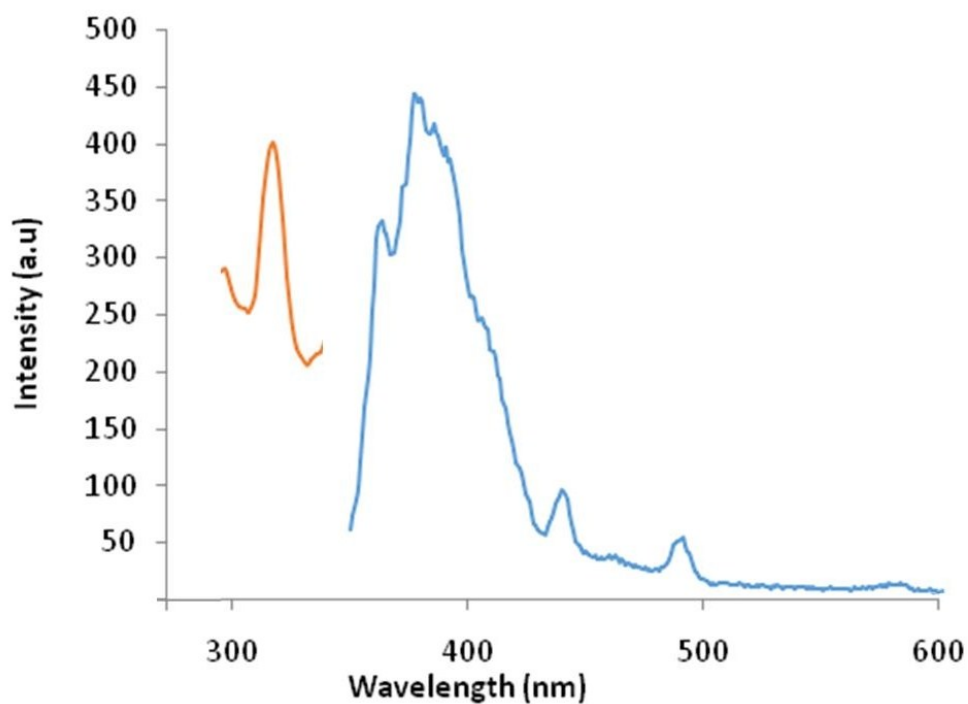


Figure S3. Solid-state emission and absorption spectra of $[\text{DyNa}(\text{ampy})_4]_n$ (**1**) at room temperature.

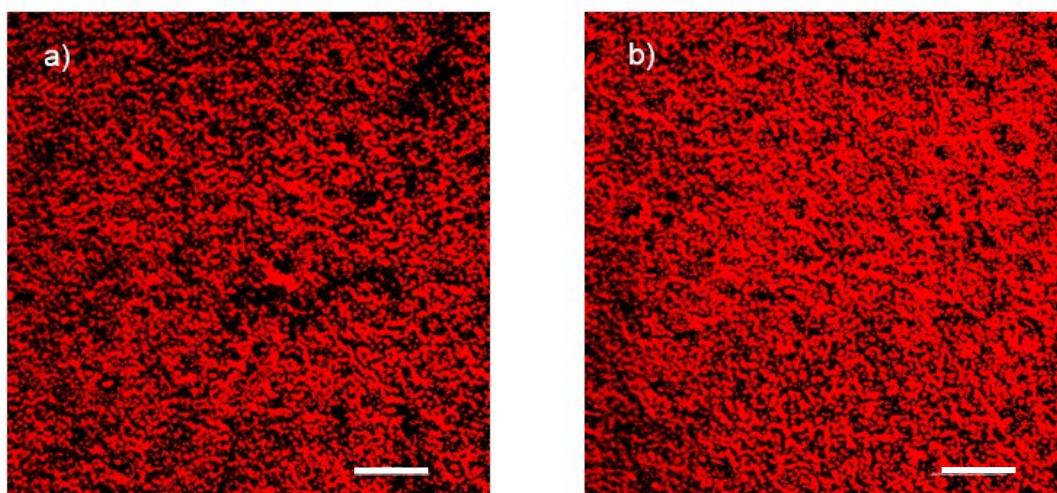


Figure S4. Fluorescence microscopy images of complex **1** immobilized on PAA brushes at different z-planes with b) as the highest intensity image. The black regions are the polymer uncovered substrate where there was no covalent binding or nonspecific adsorption of the dysprosium species. Scale bar 100 μm .