

# Supporting Information:

## A colorimetric sensor array of porous pigments

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Porphyrins (spots #1-10 in Table S1, below): Phenethyltrimethoxysilane, diethylene glycol dimethyl ether, 1,2-dichlorobenzene and nano-pure water were combined in a molar ratio ~1:8:6:3. pH and Solvatochromic Indicators (spots #11-36): Methyltriethoxysilane, triethoxy(octyl)silane, HCl (0.1M aqueous), 2-methoxyethanol, propylene glycol monomethyl ether acetate, and nano-pure water were combined in a molar ratio ~1:1:0.05:25:10:70. For spots #11-20, ~20  $\mu$ L of 0.5 M NaOH in a 1:1 H<sub>2</sub>O/2-methoxyethanol solution were added. The formulation A and B were stirred overnight at room temperature separately, and then added to the selected indicators (listed below in Table S1) and the solutions loaded into a 1" x 1" x 1/2" Teflon block containing 36 individual cylindrical wells. A floating slotted pin array printer delivered ~100 nL of the dye-containing formulations from the Teflon ink wells onto the surface of the PVDF membrane. Once printed, the arrays were placed in a nitrogen-flushed desiccator for 3 days.

**Table S1.** List of the colorants in the sol-gel pigments of the colorimetric sensor array.

Spot # (left to right, top to bottom)	Name	mg/mL
1	2,3,7,8,12,13,17,18-Octaethyl-21H,23H-porphine zinc(II)	3.0
2	5,10,15,20-Tetraphenyl-21H,23H-porphine zinc	5.0
3	5,10,15,20-Tetrakis(2,4,6-trimethylphenyl)porphine zinc	4.0
4	5,10,15,20-Tetrakis(pentafluorophenyl)-21H,23H-porphine zinc	4.0
5	5,10,15,20-Tetraphenyl-21H,23H-porphine manganese(III) chloride	5.0
6	5,10,15,20-Tetrakis(pentafluorophenyl)-21H,23H-porphyrin iron(III) chloride	5.0
7	5,10,15,20-Tetraphenyl-21H,23H-porphine cobalt(II)	3.0
8	5,10,15,20-Tetraphenyl-21H,23H-porphine indium chloride	3.0
9	5,10,15,20-Tetrakis(2,4,6-trimethylphenyl)-21H,23H-porphine	4.0
10	5,10,15,20-Tetrakis(4-hydroxyphenyl)-21H,23H-porphyrin	4.0
11	Fluorescein + NaOH	2.0
12	Methyl Red + NaOH	4.0
13	Chlorophenol Red + NaOH	4.0
14	Phenol Red + NaOH	4.0
15	Brilliant Yellow + NaOH	4.0
16	Cresol Red + NaOH	4.0
17	<i>m</i> -Cresol Purple + NaOH	4.0
18	Thymol Blue + NaOH	4.0
19	Alizarin + NaOH	2.0
20	Basic Fuchsin + NaOH	2.0
21	Crystal Violet	1.0

22	Metanil Yellow	4.0
23	Methyl Orange	2.0
24	Bromocresol Green	4.0
25	Methyl Red	4.0
26	Bromophenol Red	4.0
27	Bromothymol Blue	4.0
28	Nitrazine Yellow	4.0
29	Acridine Orange Base	4.0
30	Naphthol Blue Black	1.0
31	Bromopyrogallol Red	2.0
32	Pyrocatechol Violet	2.0
33	Nile Red	0.5
34	Nile Blue	4.0
35	Disperse Orange #25	1.0
36	Reichardt's Dye #3	1.0

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