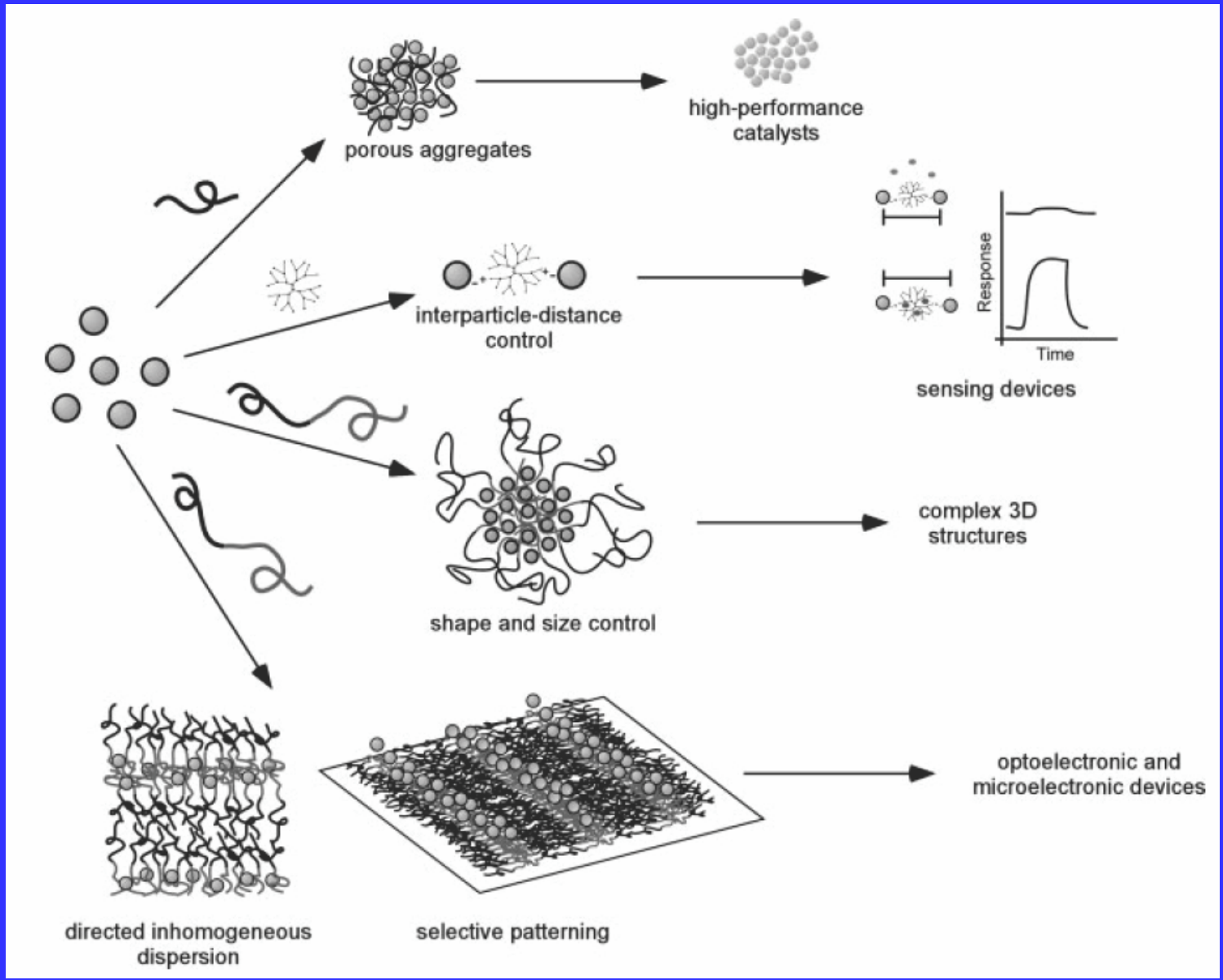
ΕΦΑΡΜΟΓΕΣ ΠΟΛΥΜΕΡΩΝ ΣΕ «ΚΑΤΑΣΚΕΥΕΣ» ΝΑΝΟΣΩΜΑΤΙΔΙΩΝ

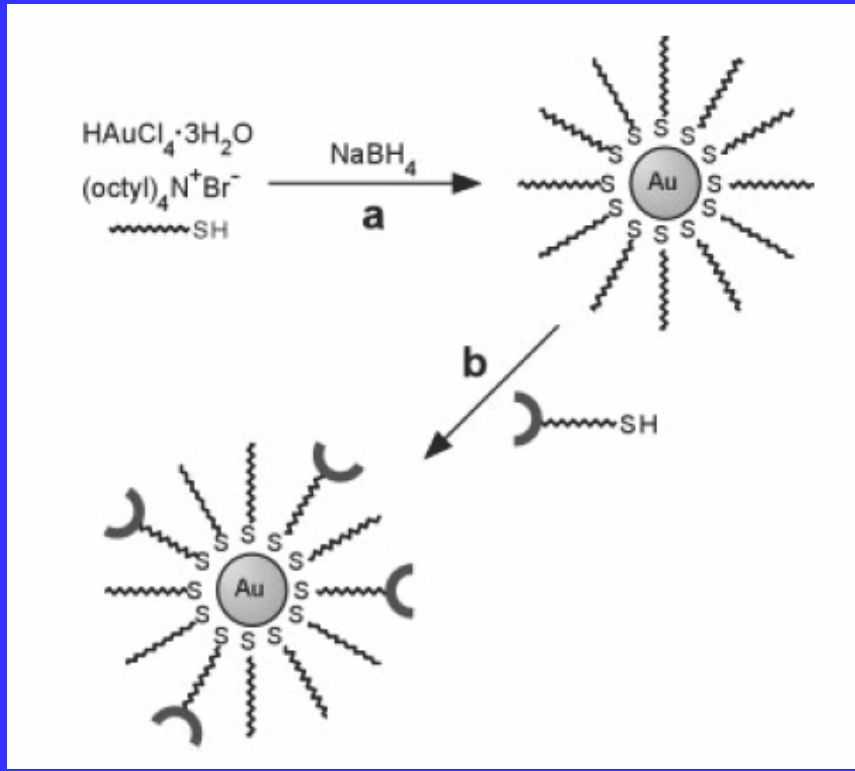
- Chemical design to control structural attributes
- Polymer-mediated assembly of nanoparticles
- Nanocomposites
- Applications of engineered materials

R. Shenhar, T.B. Norsten, V.M. Rotello, *Advanced Materials* **2005**, *17*, 657-669.

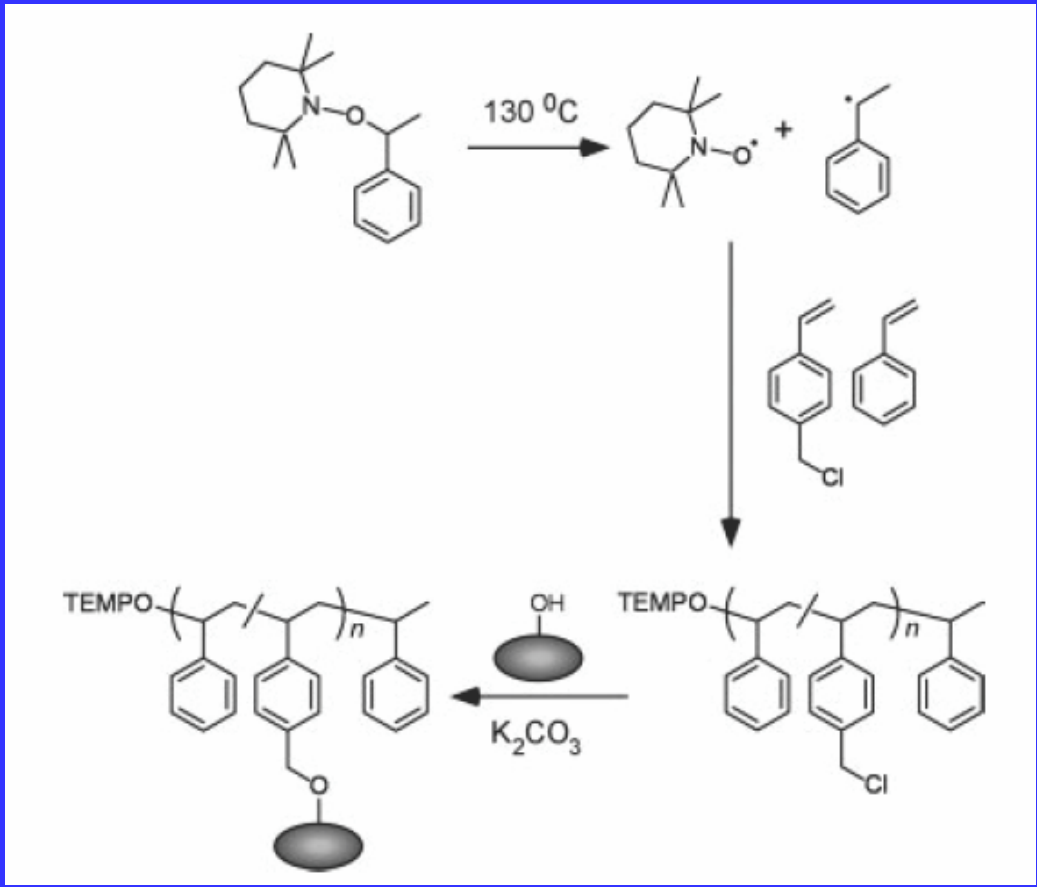
Polymer-mediated assembly approaches to fabrication of ordered nanocomposites and their possible utilization



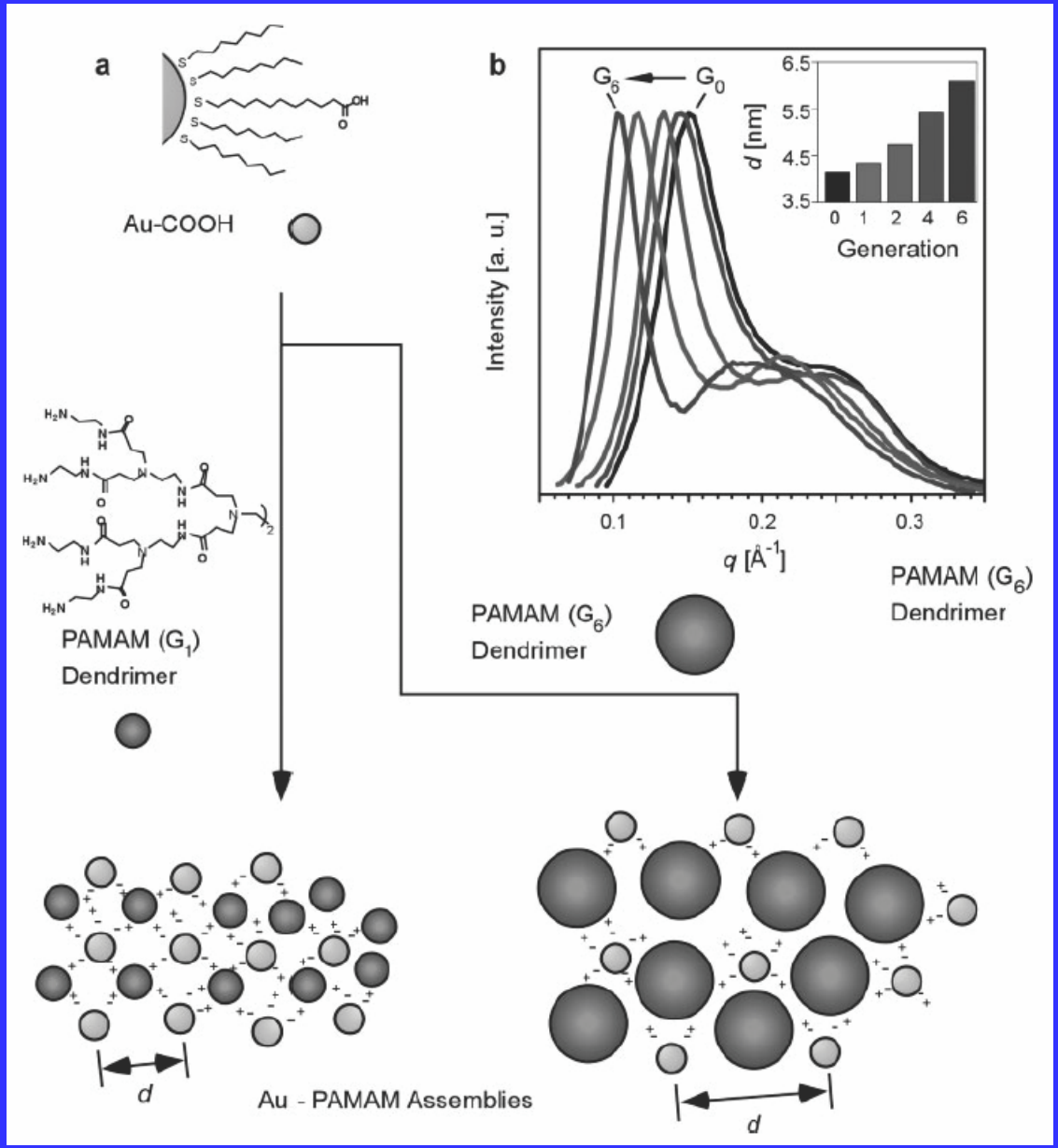
Gold nanoparticle synthesis



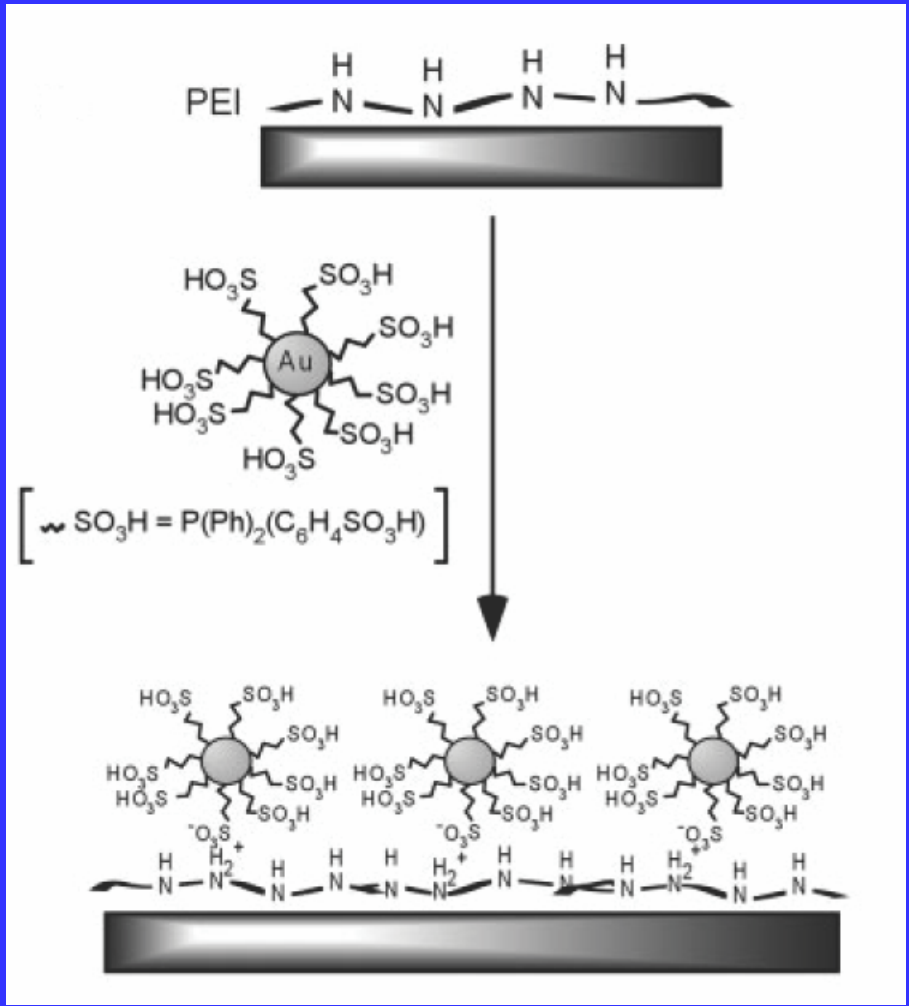
Post-polymer functionalization approach



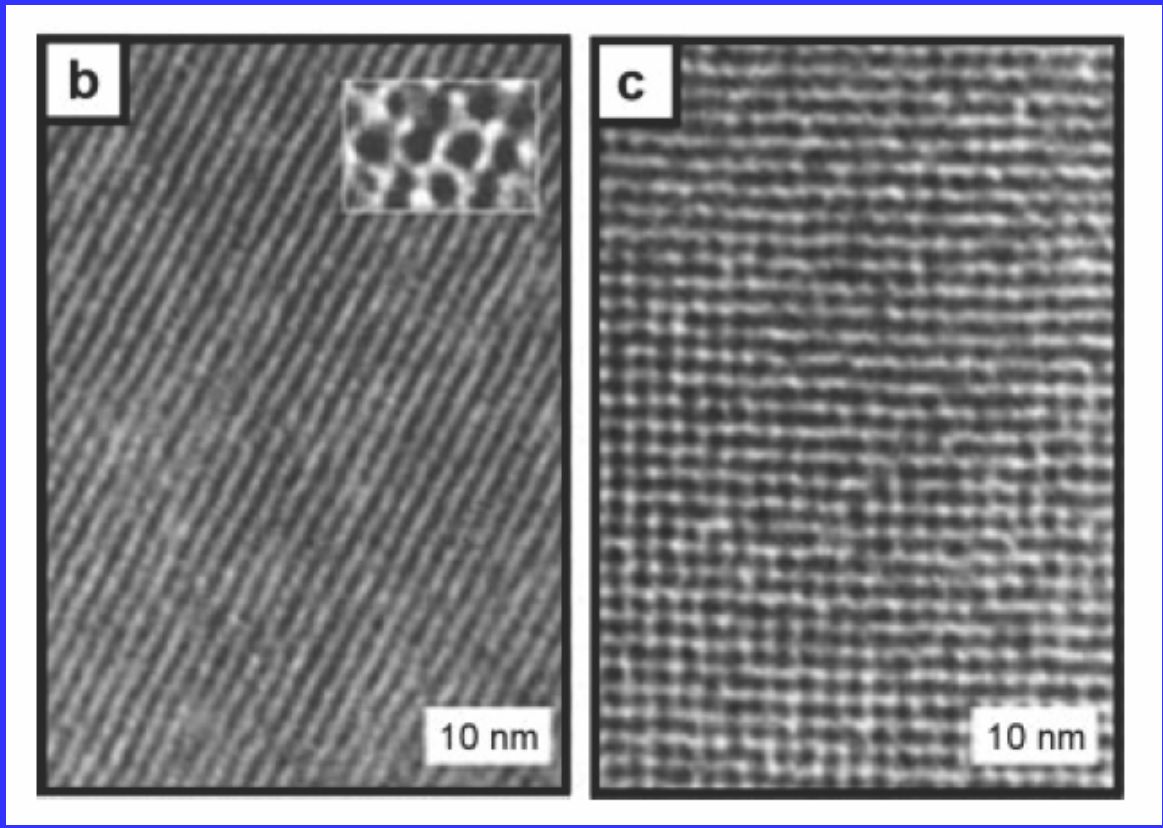
Self assembly of gold nanoparticles



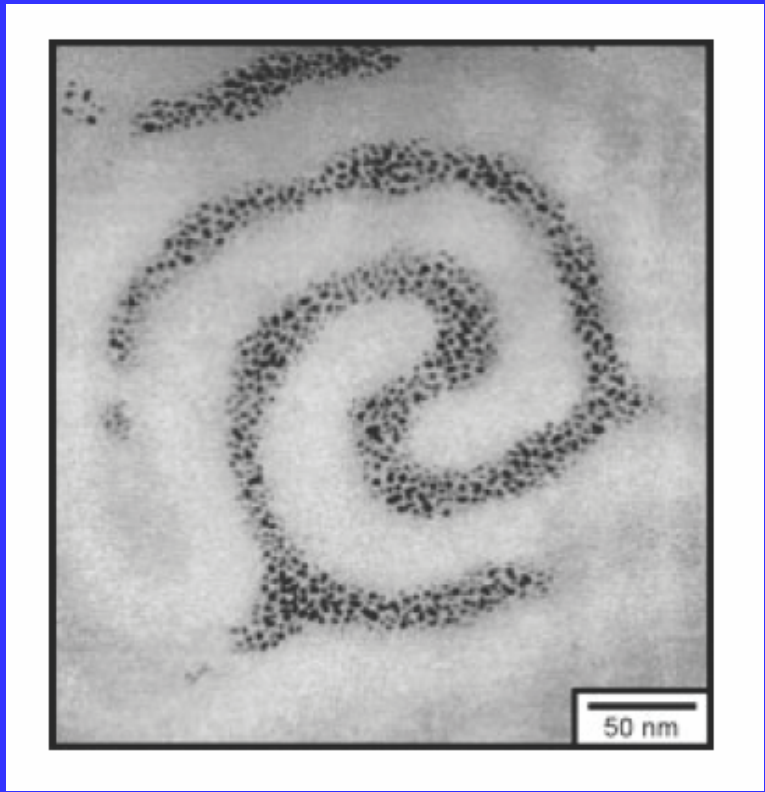
Polyethyleneimine (PEI)-mediated assembly of sulfonated Au nanoparticles



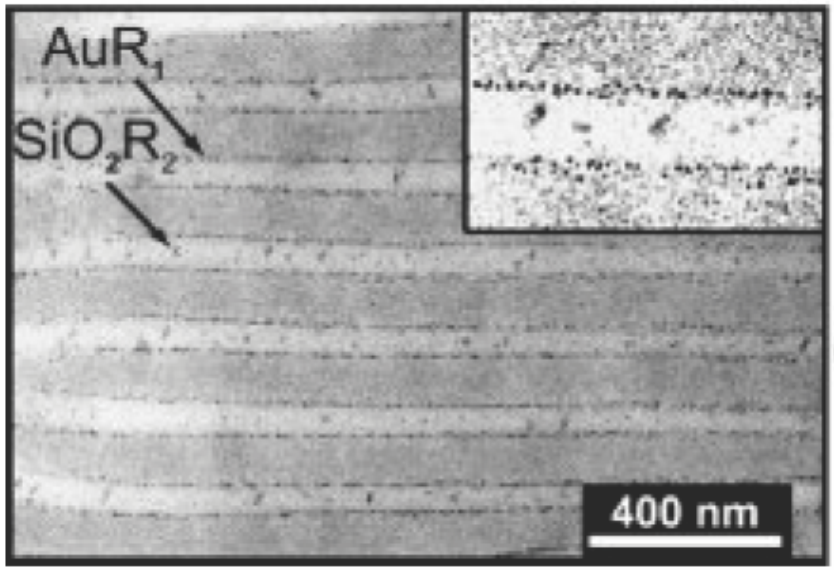
Hexagonal (a) and cubic (b) packing arrangements of the Au nanoparticles

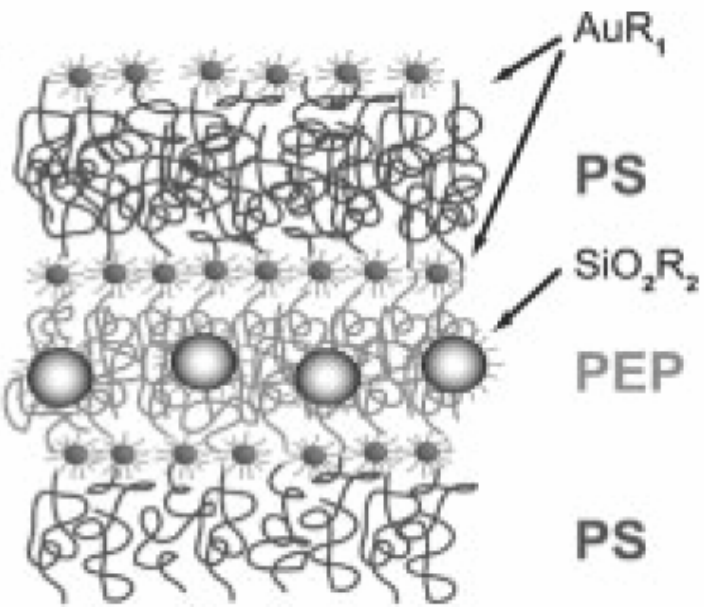


Electron micrograph of a PS-b-PMMA diblock copolymer patterned with alkanethiol-passivated Au nanoparticles

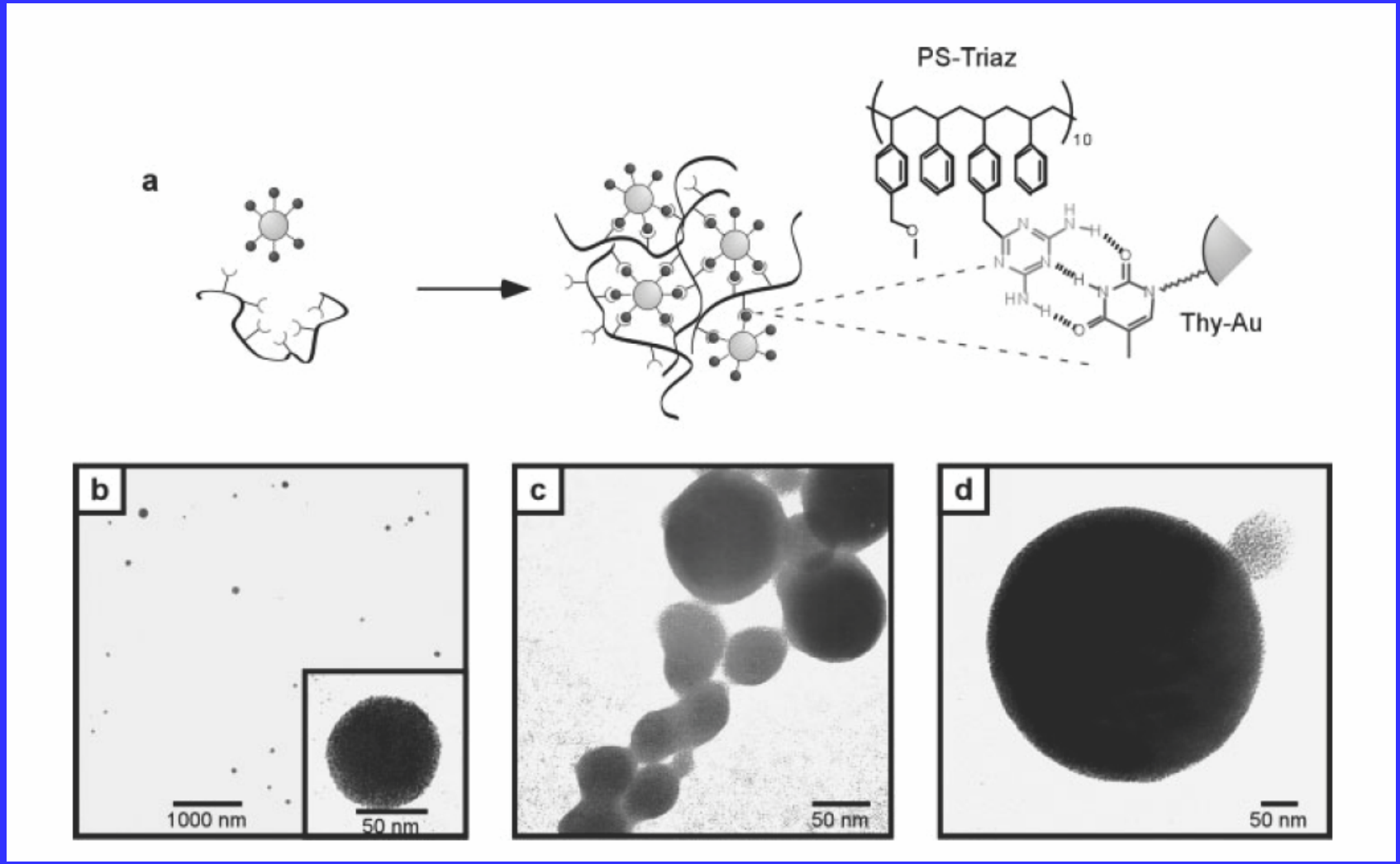


Electron micrograph of a PS-b-PMMA-Au-silica nanocomposite

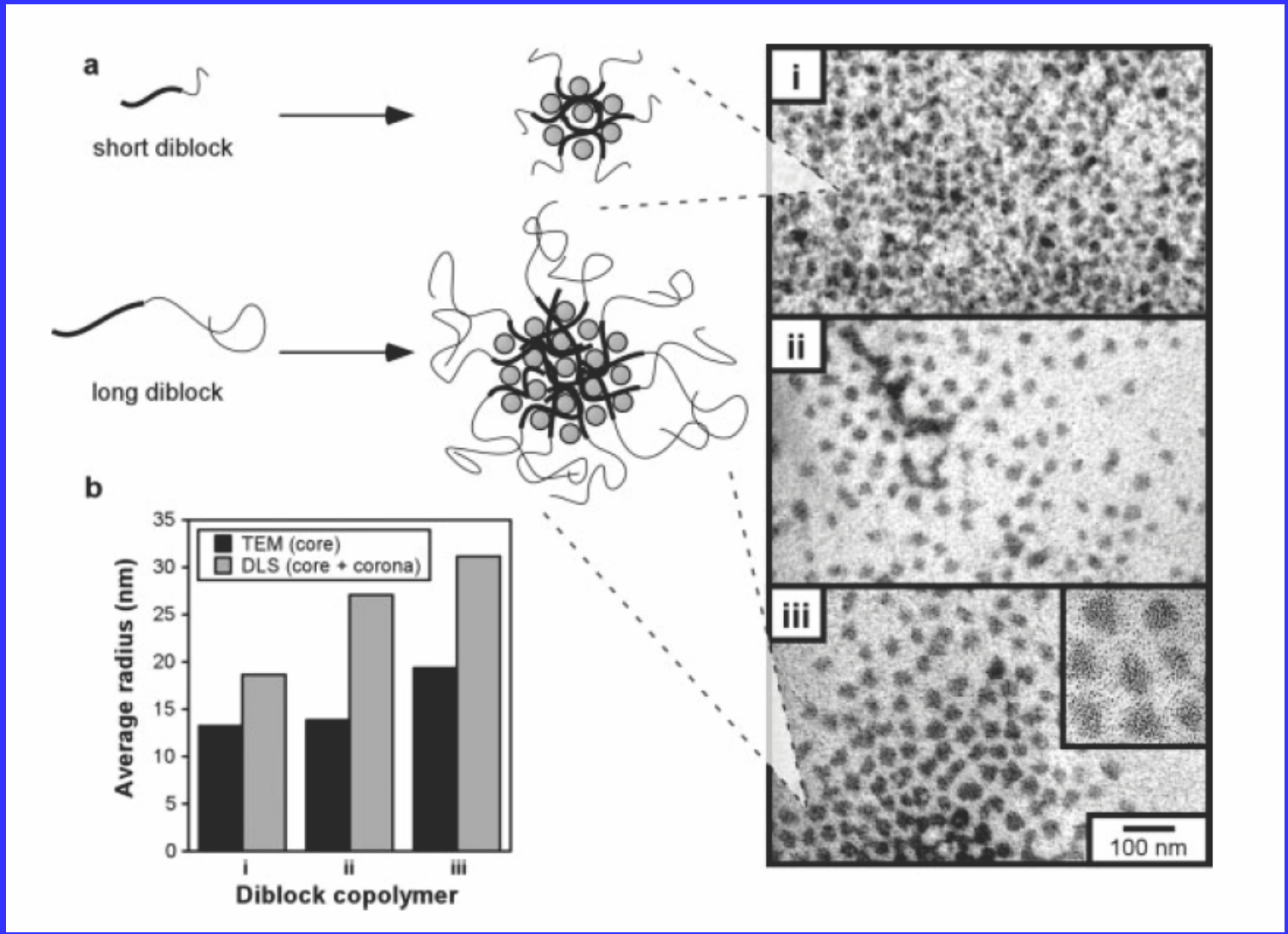




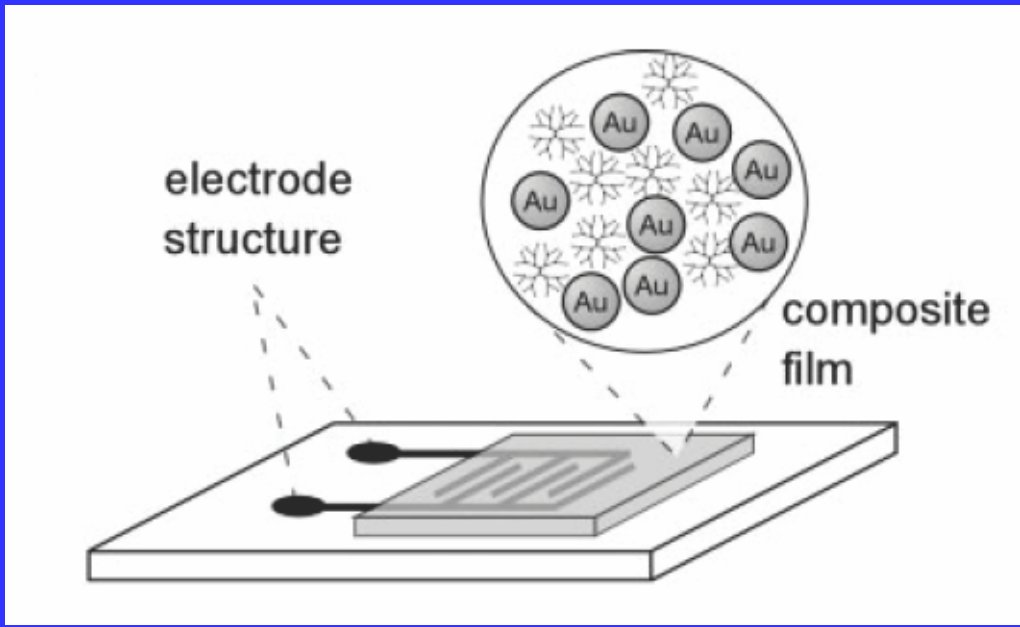
Nanoparticle-polymer assembly through molecular recognition interactions



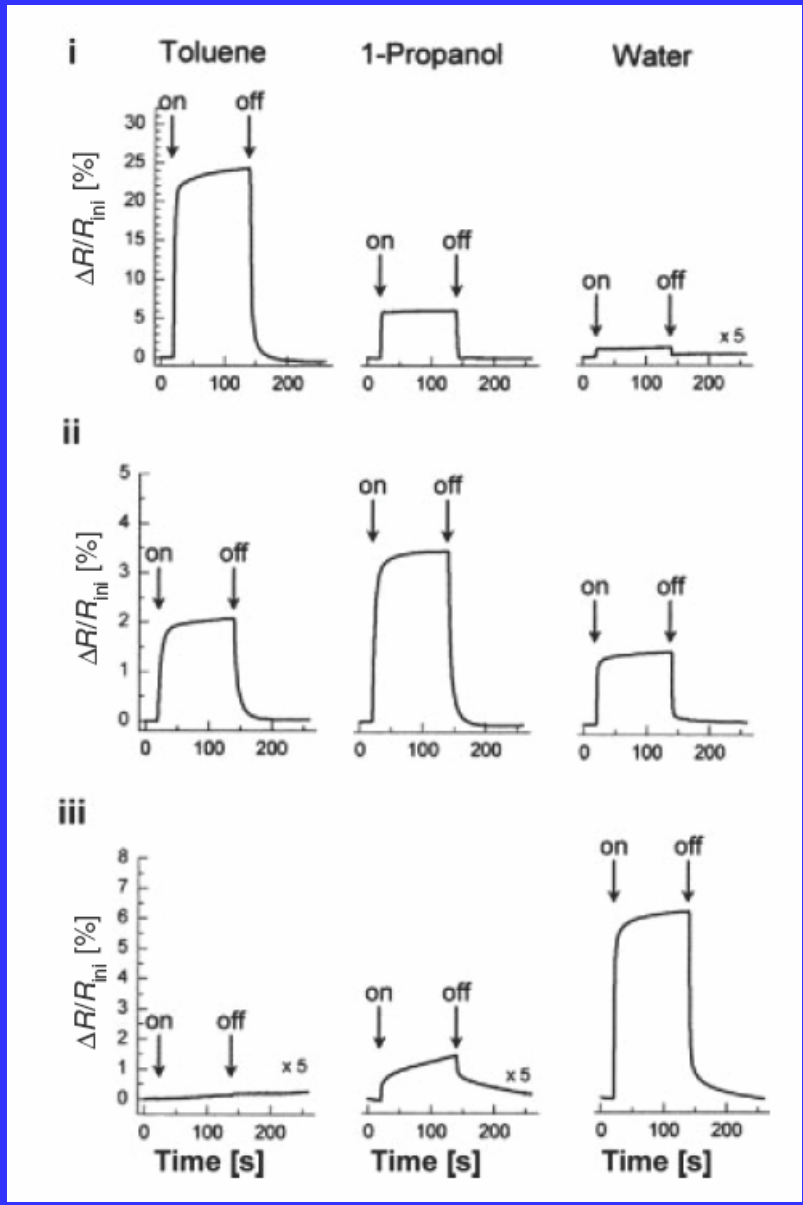
Aggregate size control using recognition-functionalized block copolymers



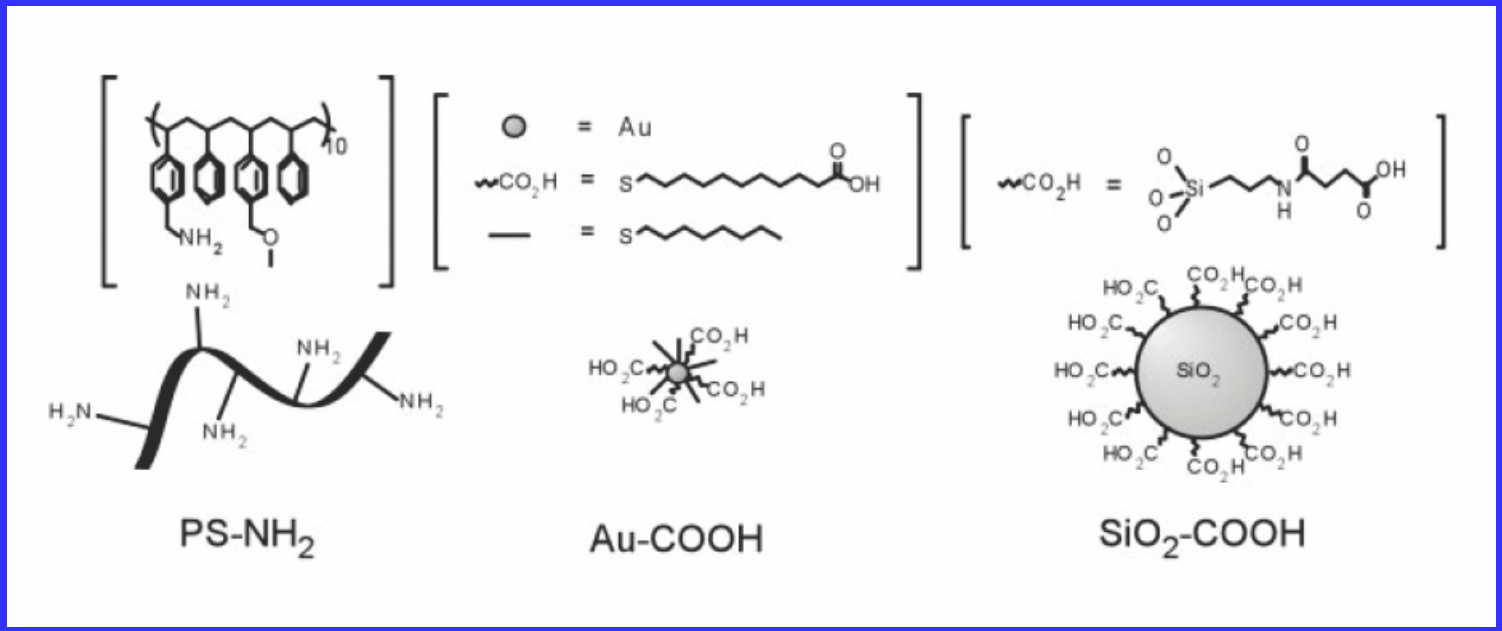
Chemical-vapor sensing using dendrimer-nanoparticle composites



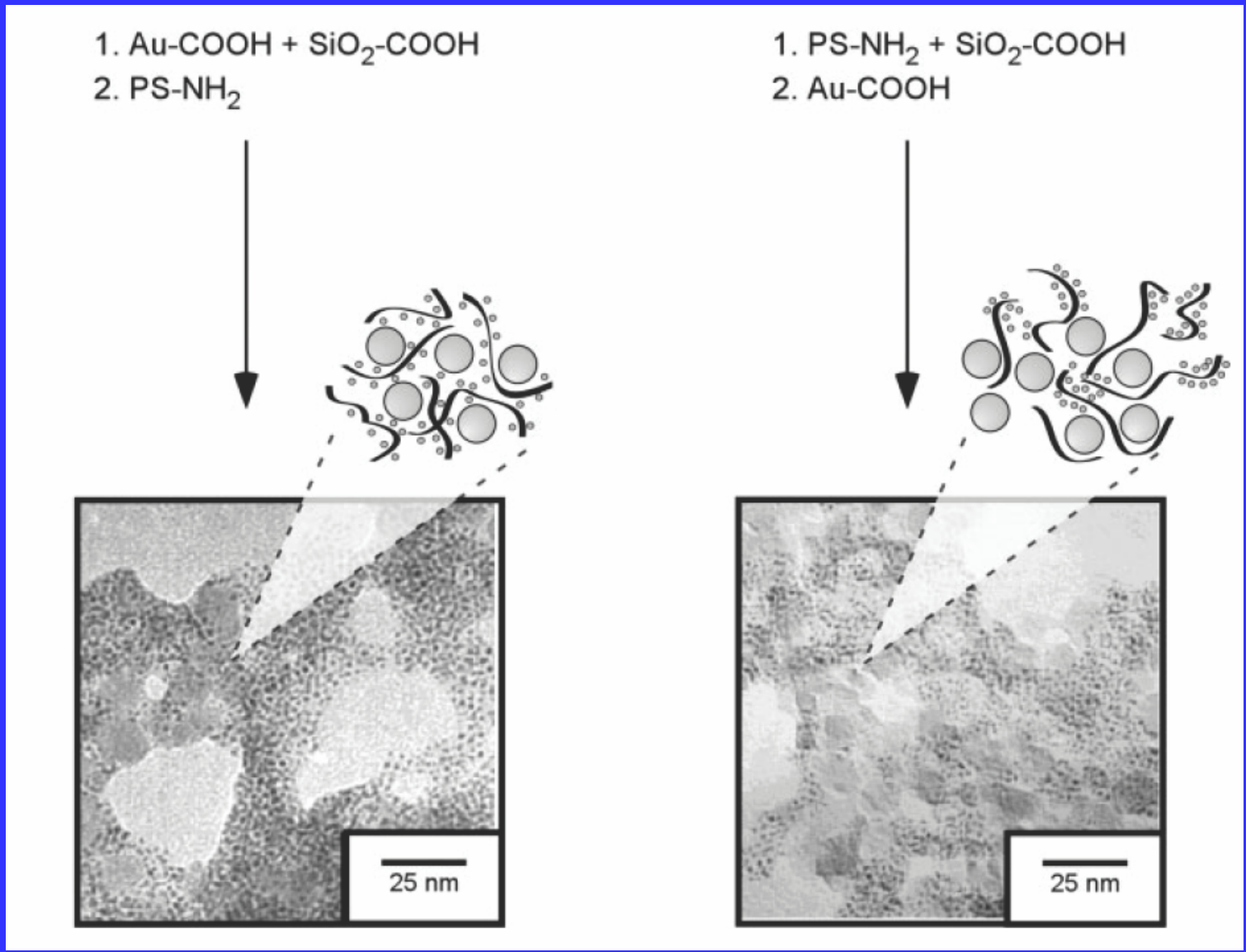
Responses of the chemresistor with different dendrimer types



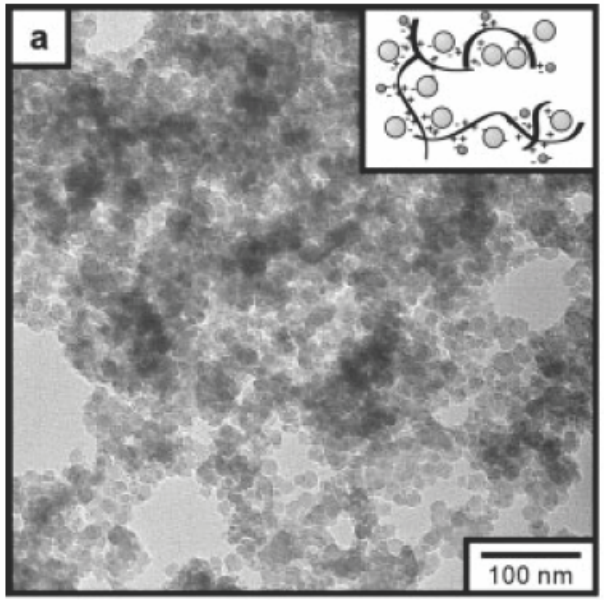
Formation of composites: building blocks

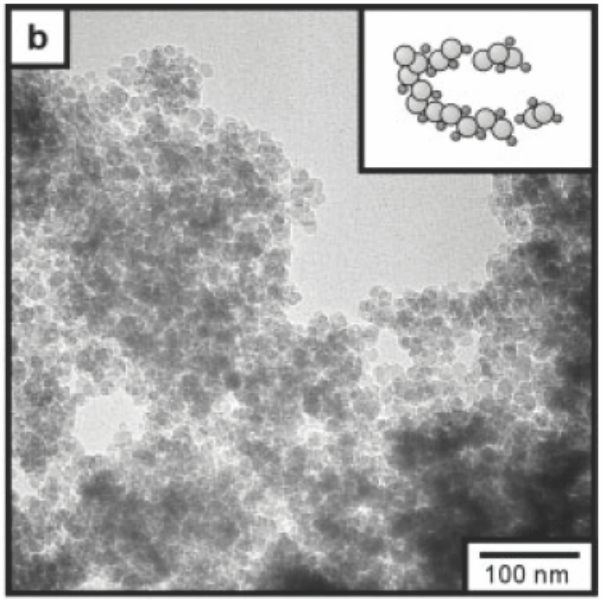


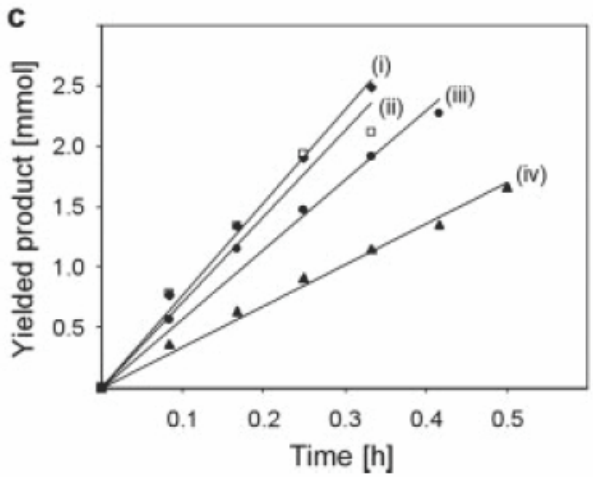
Formation of composites: assembly protocols



Formation of silica-spaced Pd nanoparticle catalyst







	Pd:Si:polymer	TOF [h^{-1}]
(i)	1:1:1	10154
(ii)	1:1:3	9419
(iii)	1:1:5	7622
(iv)	Pd/C	7202