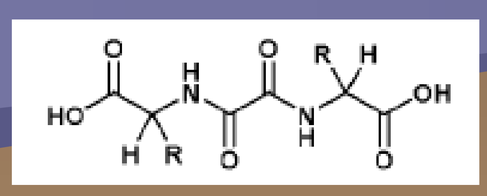
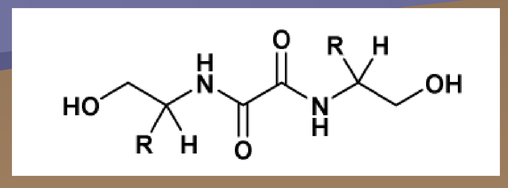
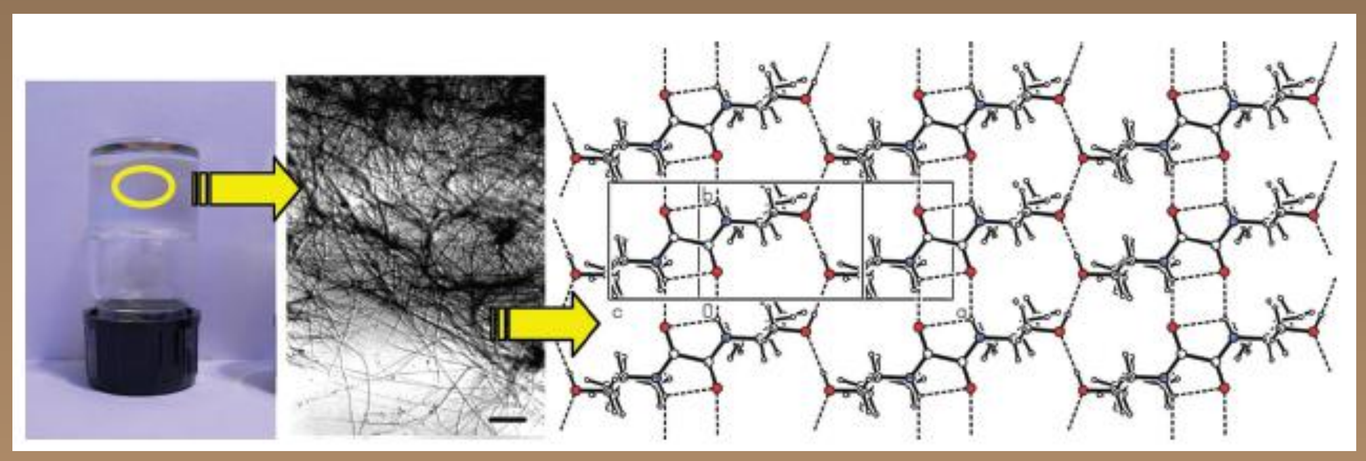
Organski nano-strukturirani funkcionalni materijali

Samoudruživanje (self-assembly) malih organskih molekula predstavlja jedan of najvažnijih načina sinteze organskih nano-strukturiranih materijala. Supramolekularni nano-strukturirani sustavi koji mijenjaju svojstva utjecajem unutarnjih ili vanjskih podražaja (svjetlo, pH, temperatura, prisustvo određenih iona ili biomolekula) predstavljaju nove funkcionalne materijale s primjenom u nanotehnologijama.

KIRALNI OKSALAMIDI SE SAMO-ORGANIZIRAJU U NITI NANO-METARSKIH PROMJERA I MIKRO-METARSKIH DULJINA U ORGANO- I HIDRO-GELOVIMA.

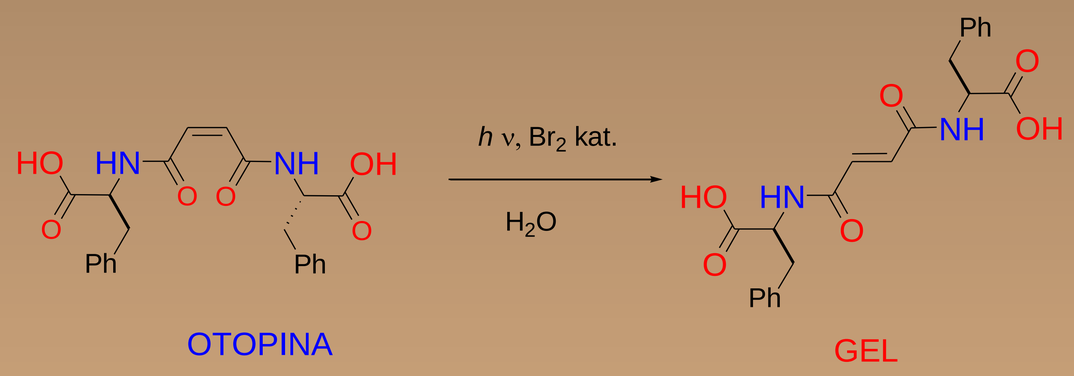


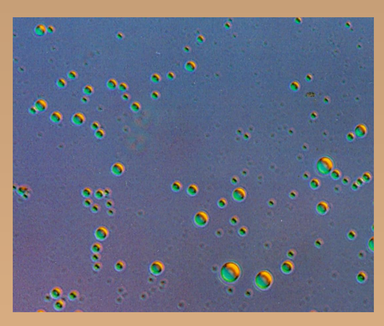


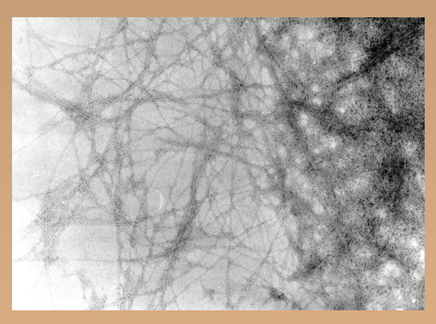


FOTOIZOMERIZACIJA BIS(PheOH)AMIDA MALEINSKE

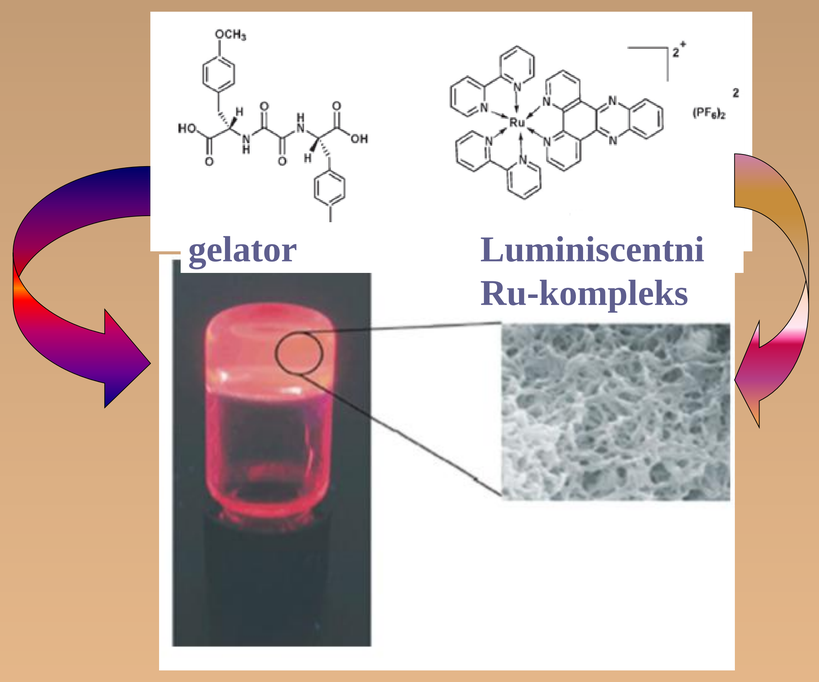
Apsorpcijom svjetla amid maleinske kiseline organiziran u mikrosfere prelazi u amid fumarne kiseline koji se organizira u nitaste agregate i tvori hodrogel. Eksperiment pokazuje da fotoizomerizacija na molekularnoj razini rezultira promjenom organizacije na nano-razini.



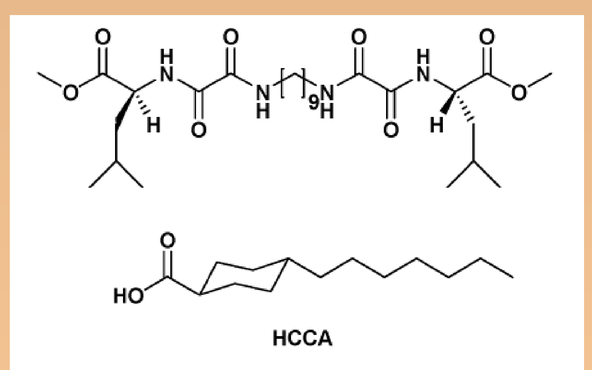




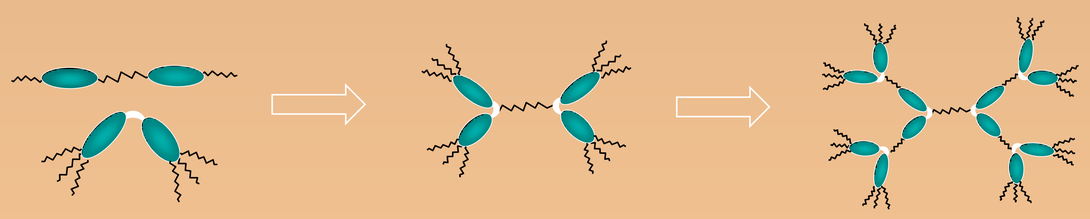
LUMINISCENTNI GEL S „UPALI-UGASI" FUNKCIJOM



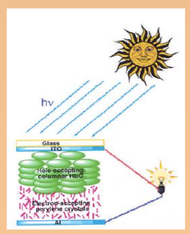
KOMPOZITNI SUSTAV TEKUĆI KRISTAL/GEL

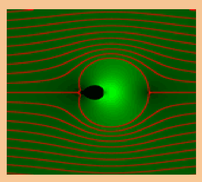


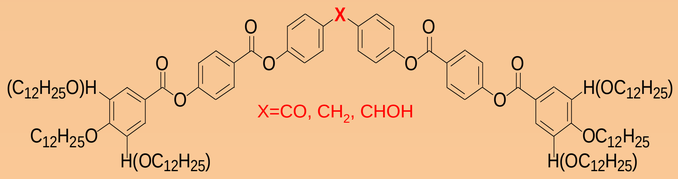
TEKUĆI KRISTALI – OD DIMERA PREMA DENDRIMERIMA



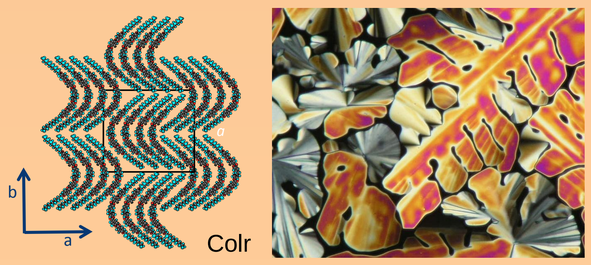
Postizanje kontrole samoogranizacije u uređene nanostrukture ⇨ Funkcionalni materijali definirane topologije ⇨ Solarne ćelije / Metamaterijali

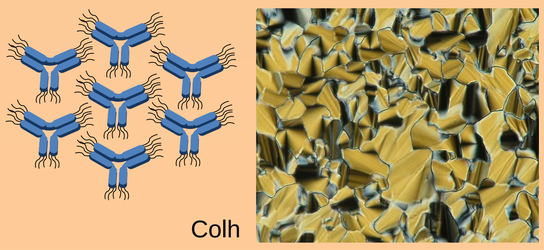
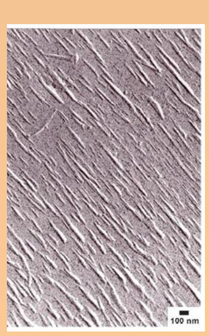
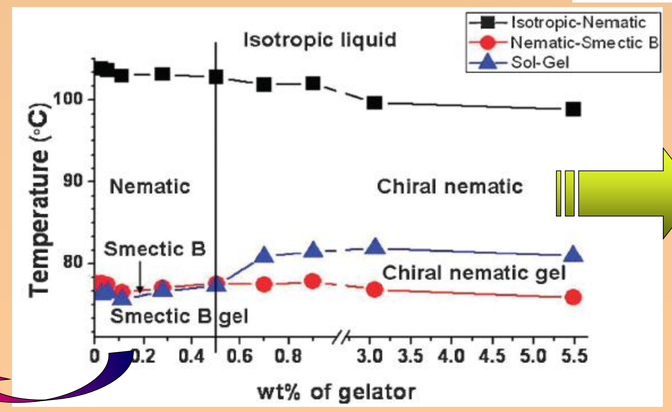






Vrsta kolonske organizacije određena je skupinom X i brojem terminalnih lanaca





Gelator