

Poli(akrilonitril) előállítása és fémkomplexeinek vizsgálata

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Témavezetők: Bencskó György, Szabó Ákos

Polimerkémiiai Kutatócsoport

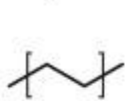
AKI Kíváncsi Kémikus Kutatótábor 2016

Polimerek

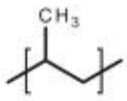


Polimerek a gyógyászatban

Polyolefins

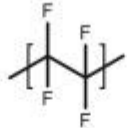


poly(ethylene)
(PE)



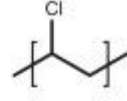
poly(propylene)
(PP)

PTFE



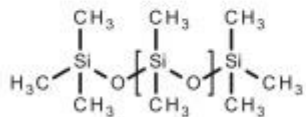
poly(tetrafluoroethylene)
(PTFE)

PVC



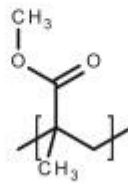
poly(vinyl chloride)
(PVC)

Silicone

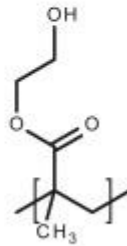


poly(dimethyl silane)
(PDMS)

Polyacrylates

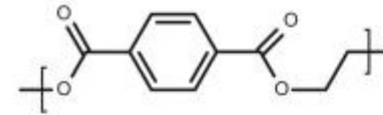


poly(methyl methacrylate)
PMMA

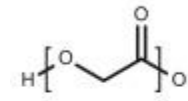


poly(hydroxyethyl methacrylate)
(pHEMA)

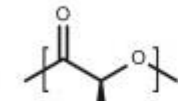
Polyester



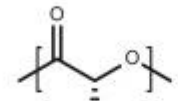
poly(ethylene terephthalate)
(PET, dacron)



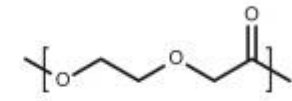
poly(glycolic acid)
(PGA)



poly-L-lactic acid
(PLLA)

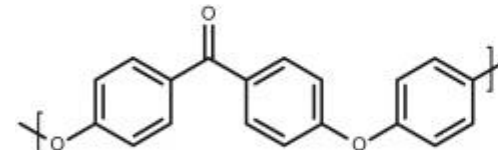


poly-D-lactic acid
(PDLA)

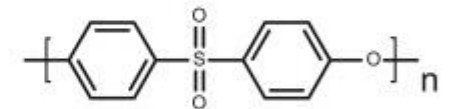


polydioxanone
(PDO)

Polyether

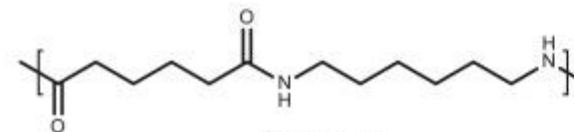


polyether ether ketone
(PEEK)



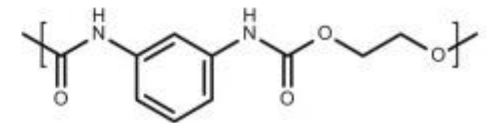
polyether sulfone
(PES)

Polyamide



Polyamide
Nylon 6.6

Polyurethane



Polyurethane

- Ref.: Maitz, M. F. ; Biosurface and Biotribology; 2015, 1, 161-176

Célkitűzések

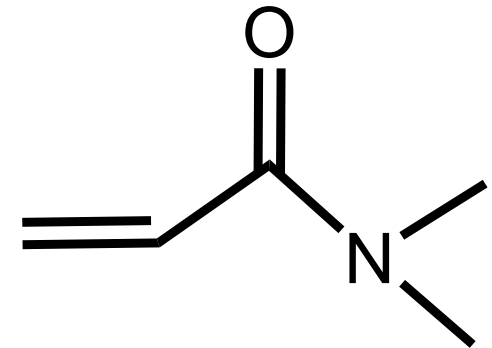
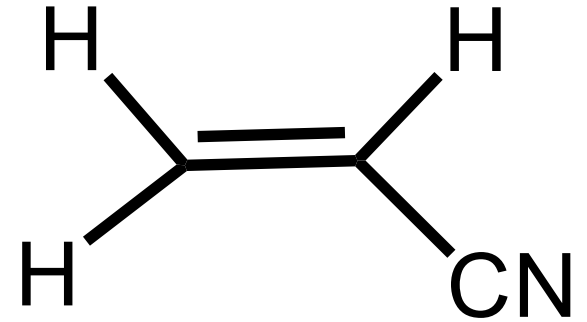
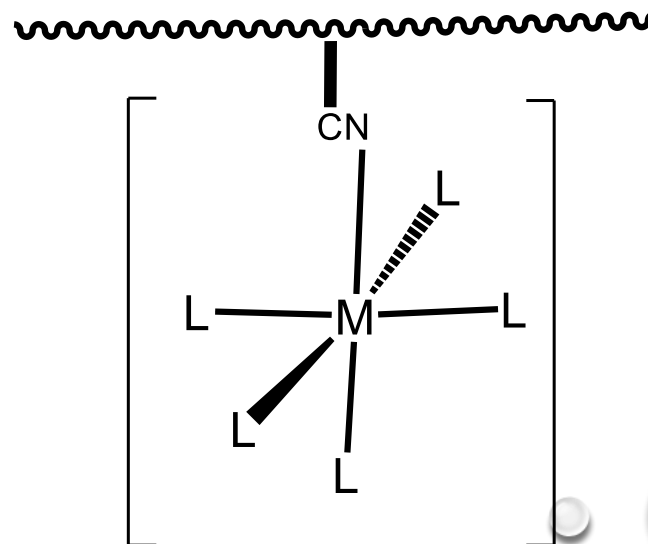
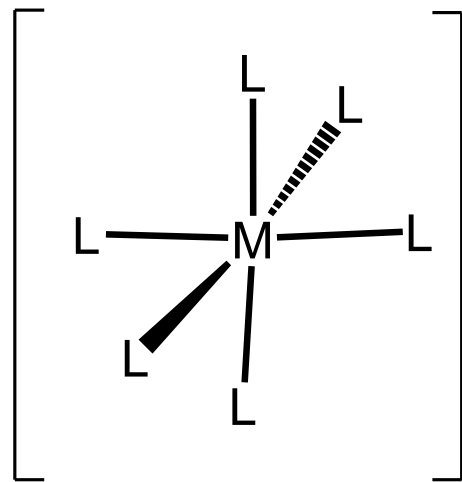
1. Akrilnitril polimerizációja

a) Szabadgyökös

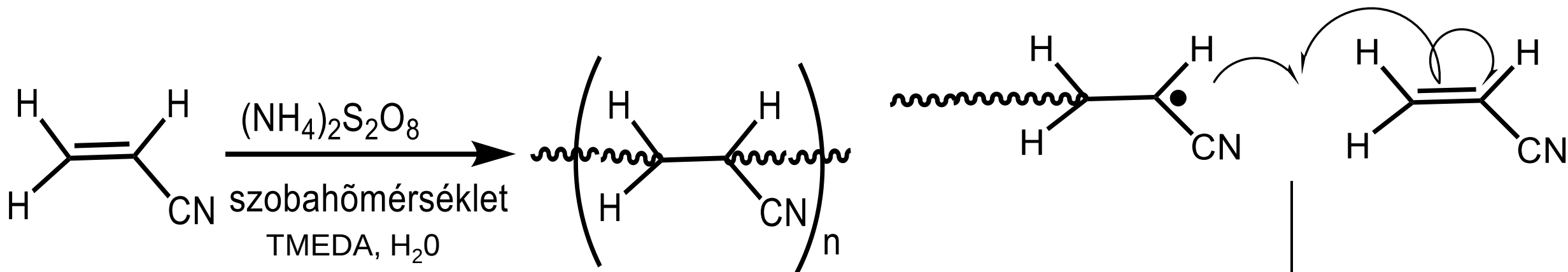
b) Élő (SET-LRP)

2. Akrilnitril – N,N-dimetil-akrilamid kopolimerizációja

3. Poli(akrilnitril) átmenetifém-komplexeinek vizsgálata

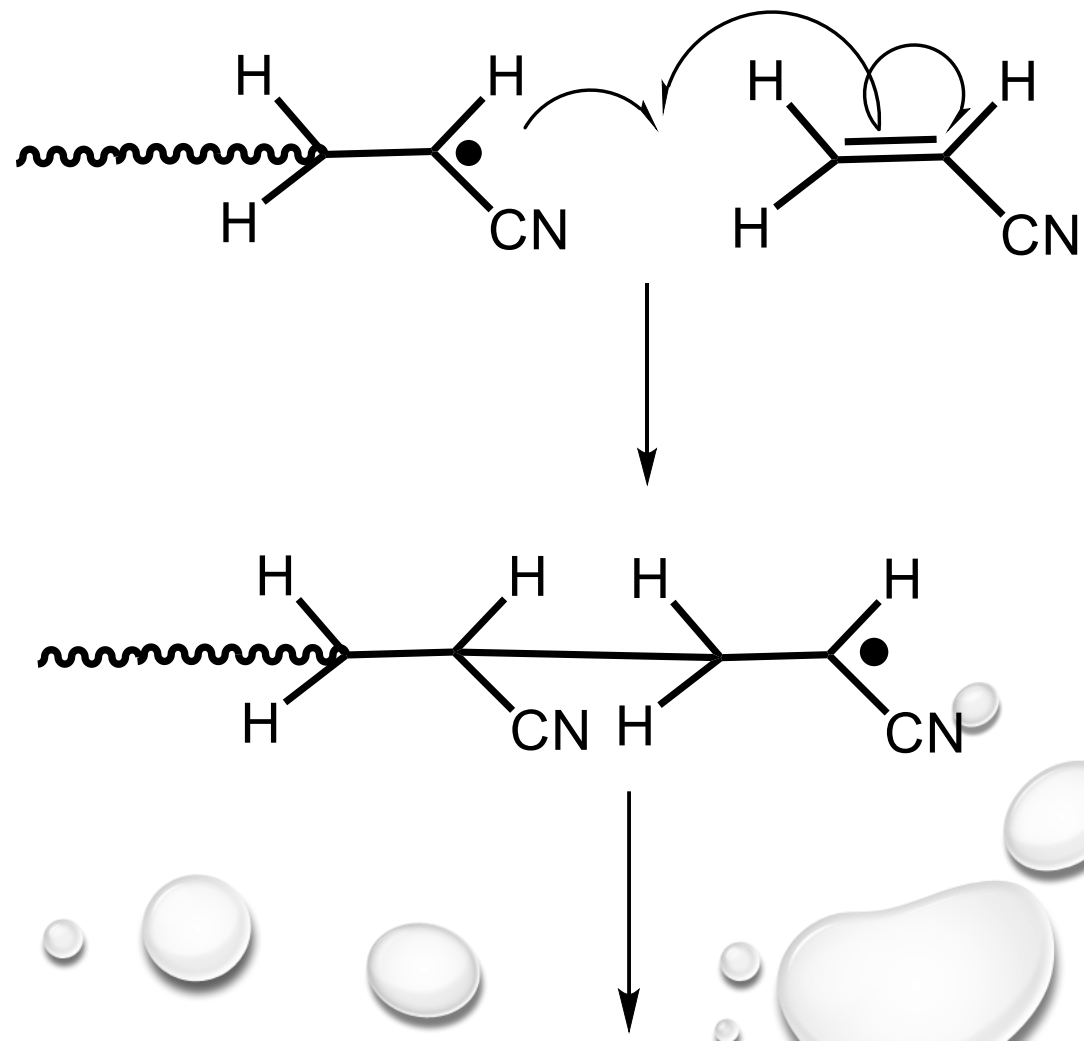


Akrilnitril szabadgyökös polimerizációja



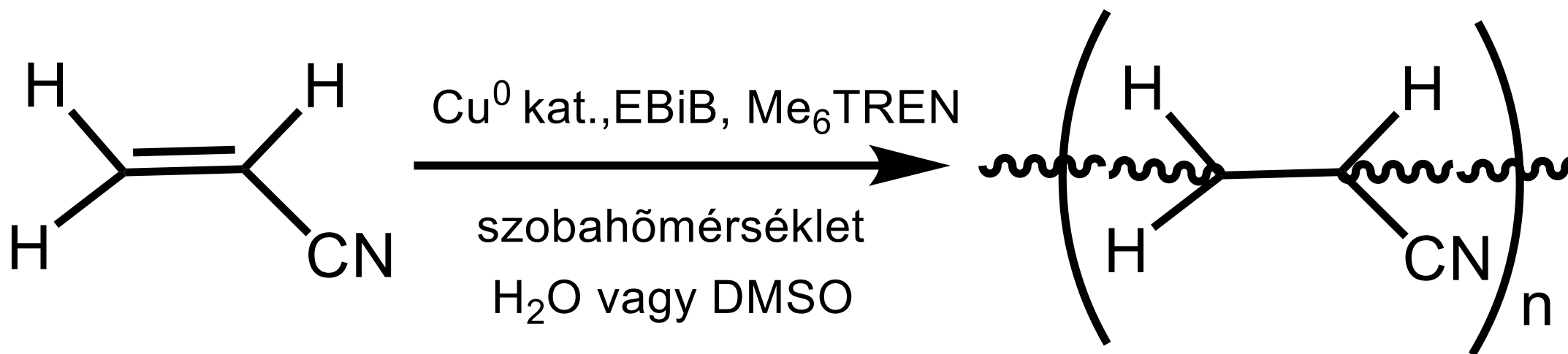
Polimerizáció lépései:

- Iniciálás
- Láncnövekedés
- Lánczáródás





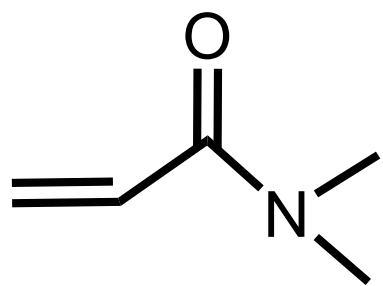
Akrilnitril élő polimerizációja



Akrilnitril élő polimerizációja



Akrilnitril és dimetil-akrilamid szabadgyökös kopolimerizációja



1

:

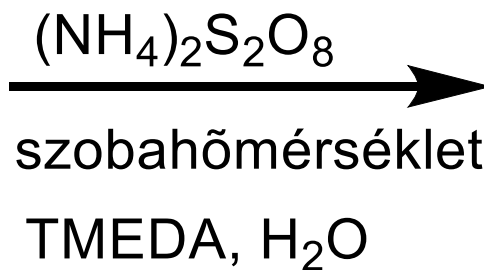
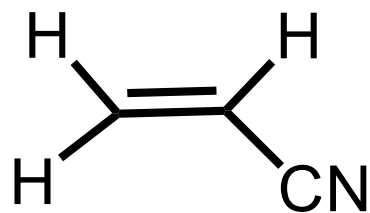
9

5

:

5

+



térháló

Poli(akrilnitril) fémkomplexeinek vizsgálata

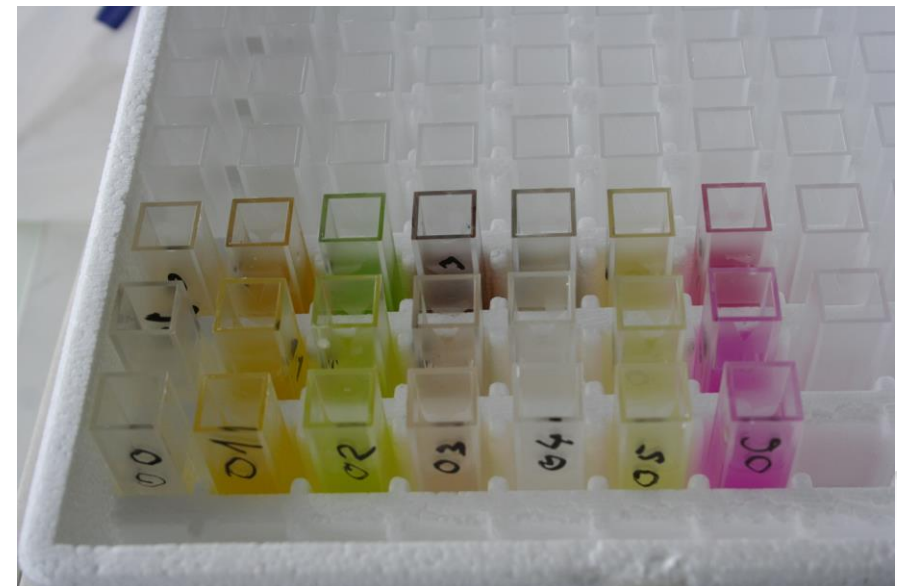
Dimetil-szulfoxidban (DMSO) oldott fémsók UV/VIS(360-800 nm) spektrofotometriai vizsgálata:

1. Önmagukban
2. Hozzáadott akrilnitrillel
3. Hozzáadott poli(akrilnitrillel)

94 mmol/dm³-es törzsoldatokat készítettünk, 4:1 akrilnitril-monomeregység/fémion arányban készítettünk oldatokat

Vizsgált fémsók:

CuCl_2 , AgNO_3 , FeCl_3 , MnCl_2 , NiCl_2 , $\text{Co}(\text{NO}_3)_2$



Akrilnitril monomer és polimer Ag(I) komplexei

