



PENELITIAN DASAR UNGGULAN PERGURUAN TINGGI (PDUPT)



Penentuan Model dan Situs Aktif Adsorpsi Ion Cd(II) pada Hibrida Amino-silika dengan Teknik Pencetakan Ion

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ABSTRAK

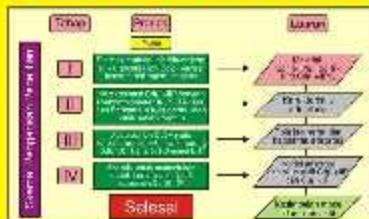
In this research, the effect of initial concentration of Cd(II) (0.01 mg/L to 0.05 mg/L) on adsorption of Cd(II) onto amino-silica hybrid was studied. The results showed that the adsorption capacity of Cd(II) onto amino-silica hybrid increased with increasing initial concentration of Cd(II). The maximum adsorption capacity of Cd(II) onto amino-silica hybrid was 0.032 mg/g at pH 5.0 and initial concentration of 0.05 mg/L. The adsorption process followed Langmuir model. The results also showed that the adsorption of Cd(II) onto amino-silica hybrid was influenced by pH, ionic strength, and temperature. The highest adsorption capacity of Cd(II) onto amino-silica hybrid was obtained at pH 5.0, ionic strength 0.05 M NaCl, and temperature 25 °C.

Kata kunci: hidroksil, silika, zat adSORPsi, teknik pencetakan ion

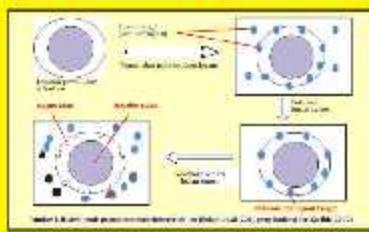
PENDAHULUAN



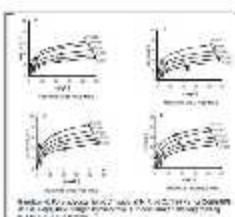
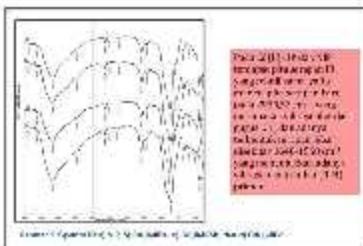
METODE PENELITIAN



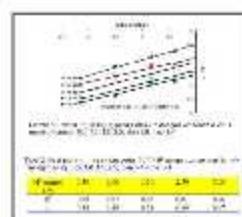
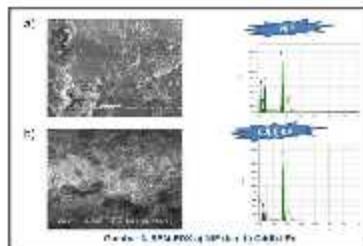
Teknik pencetakan ion (Ionic imprinting)



HASIL PENELITIAN



Initial Concentration (mg/L)	pH = 5.0				
	0.01	0.02	0.03	0.04	0.05
0.01	0.002	0.004	0.006	0.008	0.010
0.02	0.004	0.008	0.012	0.016	0.020
0.03	0.006	0.012	0.018	0.024	0.030
0.04	0.008	0.016	0.024	0.032	0.040
0.05	0.010	0.020	0.030	0.040	0.050



SIMPULAN Bahan adsorpsi Cd(II) dengan basis hidroksil silika ini menunjukkan hasil adsorpsi yang baik dan merupakan hasil maksimal pada pH 5.0. Perbedaan konseptasi ion Cd(II) yang diambil sebagai celahan dan mengakibatkan pola adsorpsi adsorpsi yang berbeda.

REFERENSI

- Buhani, Sumadi, S., Buhani, Yurina, R.D., Dharmawati, Dwiwita, 2017, 2017: 119-128.
- Buhani, Buhani, Sumadi, Asar. J.Chem., 20, 2,24,11-30-40.
- Buhani, Nuraini, Nuraini, Kartini, E.E., Suharno, Desah, Wahr. Trakt., 2016, 56, 1240-1252.
- Su, H., Chen, S., Tan, T., Doseki, Burcham. 2007, 49, E1046.

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