

BAB V

KESIMPULAN DAN SARAN

5.1 Kesimpulan

Kesimpulan yang dapat diambil dari penelitian ini adalah :

1. Model Isotermal pada penelitian adsorpsi secara *batch* tidak dapat ditentukan untuk data penelitian kali ini karena konsentrasi larutan tembaga yang digunakan terlalu besar.
2. Laju alir optimum untuk penelitian adsorpsi kontinu dengan kolom unggun tetap adalah 51,6 ml/menit.
3. Kapasitas adsorpsi berbanding lurus dengan tinggi unggun/ jumlah karbon aktif dengan nilai terbesar kapasitas adsorpsi pada tinggi unggun 6 cm.
4. Kapasitas adsorpsi berbanding terbalik dengan konsentrasi awal larutan dengan nilai kapasitas adsorpsi terbesar terjadi pada konsentrasi awal larutan 100 ppm.
5. Model kurva *breakthrough* yang cocok dengan data penelitian adalah model Yoon-Nelson dan Adam-Bohart.
6. Kapasitas maksimum adsorpsi sebesar $1,87 \times 10^4$ mg/L yang tercapai untuk kondisi operasi dengan konsentrasi larutan sebesar 100 ppm, tinggi unggun 2 cm dan laju alir larutan 51,6 ml/menit.

5.2 Saran

1. Perlu dipertimbangkan menggunakan karbon aktif selain *Jakobi* sebagai pembanding untuk meminimalkan limbah sisa penelitian.
2. Laju alir yang digunakan pada kolom dibuat konstan agar sistem mencapai kondisi *steady state* sehingga hasil yang didapat menjadi lebih maksimal.
3. Untuk penelitian selanjutnya, konsentrasi yang digunakan jangan terlalu besar, lebih baik menggunakan range konsentrasi limbah tembaga yang ditemukan pada limbah industri.

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