BAB V
KESIMPULAN DAN SARAN

5.1 Kesimpulan

Dari hasil penelitian leaching *spent catalyst* Co-Mo/Al_2O_3, dapat disimpulkan:

1. Pada peningkatan waktu *leaching*, akan dihasilkan kecenderungan perolehan *recovery* ion logam yang meningkat pula akibat kontak antara pelarut dengan zat terlarut dalam kurun waktu yang lama dapat menghasilkan ekstrak yang semakin banyak.
2. Pada saat *column leaching*, nilai *recover* logam kobalt (Co^{2+}) adalah yang terbesar (33,12%, 31,62%, dan 47,19%) yang diakibatkan oleh kelarutan ion kobalt akan semakin meningkat jika berada pada suasana asam.
3. Hasil ion logam molibdenum dan alumunium tidak terlalu besar jika dibandingkan dengan ion kobalt yang disebabkan karena ion logam molibdenum (Mo^{6+}) dalam bentuk MoO_3 memiliki nilai kelarutan yang menurun pada suasana asam. Begitu juga pada ion logam alumunium (Al^{3+}), kekuatan aluminium dalam membentuk ligan bersama senyawa organik asam sitrat rendah.
4. Pada variasi diameter partikel nilai *recovery* ion logam yang paling besar berada pada ukuran -20+40 *mesh*.
5. Pada model *Shrinking Core* diketahui bahwa yang mempengaruhi laju *leaching* adalah difusi secara internal akibat ikatan kompleks antara ligan dan ion logam yang terlalu besar.

5.2 Saran

Dari hasil penelitian *leaching spent catalyst* Co-Mo/Al_2O_3, dapat disarankan:

1. Menambah variasi laju alir pada *column leaching* sehingga didapatkan laju maksimum yang dapat digunakan pada column yang telah dirancang untuk menghasilkan nilai *recovery* ion logam yang optimum.
2. Menambah waktu *leaching* menjadi lebih dari dua hari sehingga dapat terlihat hasil *recovery* ion logam secara keseluruhan.
3. Menambah variasi asam organik sehingga dapat dilihat jenis asam organik yang cocok untuk *recovery spent catalyst* Co-Mo/Al_2O_3 pada *column leaching*.

4. Melakukan analisis XRF untuk hasil *spent catalyst* setelah *leaching* agar dapat diketahui komponen terkandung serta komposisinya.
5. Melakukan pengecekan nilai *flowrate* pada *head* pompa peristaltic yang akan masuk ke dalam setiap column
6. Melakukan pengecekan terhadap distribusi pada setiap ukuran partikel pada *column leaching*.
7. Melakukan pengecekan terhadap model kinetika selain *shrinking core model* sehingga dapat mengetahui model yang cocok pada penelitian ini.

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