

## CHAPTER V

### CONCLUSION AND RECOMMENDATION

#### V.5.1. Conclusion

1. From this study, it was found that best ratio between cellulose/urea/sodium hydroxide/ECH in producing hydrogel at 4 gram cellulose, 7:12:81 NaOH/urea/aquadest, 25 mL 9%(v/v), where the %SR has high resulting (52.4%). Where cellulose increased, structure of hydrogel has a hardest. It caused by cellulose structure of rice husk.
2. Adsorption of Cu in hydrogel composite performed in chemisorption and it was proved at isotherm adsorption that when temperature increase from 30 °C to 70 °C Adsorption capacity also increased.
3. Equilibrium state in copper adsorption reached at 300 minutes.
4. Best pH to adsorbed copper is at 7 pH  $Q_e = 4.3818$  mg/g

#### V.5.2. Recommendation

Adsorption Kinetics should performed at different temperature at 50 °C, 70°C and with different mass of hydrogel composite. This study also has potentially to study the other metal like  $Pb^{2+}$ ,  $Cr^{2+}$  to aim the characteristic of adsorbent.

Characterization SEM, XRD, FTIR-ATR after adsorption should be studied to compared with before adsorption, and study properties of hydrogel composite after and before adsorption

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