CHAPTER V
CONCLUSIONS

We prepared the sulfosalicylic acid-loaded poly(acrylic acid) hydrogels at various crosslinking ratios to study the release mechanism and diffusion coefficient of drug from poly(acrylic acid) hydrogels with and without electric field. Moreover, the drug-load polypyrrole/poly(acrylic acid) blend films were prepared at various crosslinking ratios to compare the release mechanism and diffusion coefficient with drug-loaded poly(acrylic acid) hydrogels. Each hydrogel was characterized the swelling ability and mesh size. The degree of swelling, the weight loss, and the mesh size were increase with decreasing of crosslinking ratio. The diffusion coefficients of drug from PAA hydrogel and PPy/PAA blend film increase with decreasing of crosslinking ratio due to larger mesh or pore size of hydrogel. under applyied electric field strength, the diffusion coefficient of the drug from PAA hydrogel increases under applyied of electric field strength due to the electrostatic force from electrical current driving the charged drug to the oppositely charged electrode. Moreover, the diffusion coefficient of drug from PPy/PAA blend film is higher than PAA the diffusion coefficient of drug from hydrogel, so the conductive polymer is an effective in promoting the transport of SSA.