

## CHAPTER VIII

### CONCLUSIONS

In Chapter III, we proposed the simple approach to prepare *N,N*-bis(5-methyl-2-hydroxybenzyl)methylamine conjugated with chemiluminescent molecules, luminol. The obtained novel compound exhibits the luminescence properties, in the same time, and self-assembly with Cu(II) (host:guest ratio 2:1) which useful to simplify the flow injection analysis system.

In the following part, we developed the multi-responsive external stimuli block copolymer via RAFT polymerization to control the structure. Block copolymer shows the thermal-responsive properties via PNIPAAm and pH sensitive properties via PDMAEA with (Chapter IV and VI) and without (Chapter V) fluorescent molecules. In Chapter IV, the fluorescent block copolymers form micelles in aqueous solutions depending on the composition of diblock copolymer, pH and temperature of the solution. Subsequent shell cross-linking of the PDMAEA corona can permanently fix the core/shell nanostructure with the increasing of micelle size from 35 to 50 nm. In the following sections, we demonstrated the simple method to control self-assembly morphology through thermal (Chapter V) and pH (Chapter VI). It might be a good model for others type of pH and thermal responsive polymer. The complex formation from negative charge chitosan nanosphere and positive charge PDMAEA leads to the forming of mixed micelle system. The behavior of mixed micelle can be controlled by pH and preparation method (Chapter VII).