

SUMMARY OF NEW CONCLUSIONS OF PhD THESIS

Title: *“Modified Polyaniline materials on tea residue and rose myrtle, aiming at treatment of aqueous metallic ions”*

Specialty: Organic chemistry

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New conclusions

This thesis is implemented with the purpose of synthesis PANi-based materials modified with rose myrtle and tea residue and performing the study on the adsorption capability of metal ions and providing the application plan on treatment of heavy metals on typical pollution.

After the implement period, the following new results were obtained:

- Performing the modification of rose myrtle product and tea residue on KOH, H₃PO₄ solution, which gave the much higher adsorption capacity of aqueous Pb(II), Cr(VI) ions comparison with the raw plant products.

- 14 new PANi-based materials has been successfully chemical synthesised with tea and rose myrtle product, including 08 types from PANi modified with rose myrtle product (PANi-S1÷PANi-S8) and 06 types from tea residue (PANi-C1÷PANi-C6). The structure and properties of selected materials have been analysed via IR, SEM, TEM, BET.

- Performing the study, evaluation on adsorption capacity of PANi-based materials modified with rose myrtle leaves and tea residue products on aqueous As(V), Cu(II), Pb(II), Cr(VI) ions over time. In conclusion, the high results of adsorption capacity of aqueous Pb(II), Cr(VI) ions in room temperature, neutral medium have been found from PANi-C5, PANi-C6, PANi-S7, PANi-S8.

- The impact of other factors such as initial concentration, quantity of adsorbent, pH on adsorption efficiency have been studied on 04 types of selected materials (PANi, PANi-S1, PANi-S8, PANi-C6) for Pb(II), Cr(VI) ions. The adsorption model following the Langmuir isotherm.

- Propose a preliminary application plan with 02 new PANi-based materials (PANi-S8, PANi-C6) on treatment of aqueous Cr(VI), Pb(II).

Supervisor

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