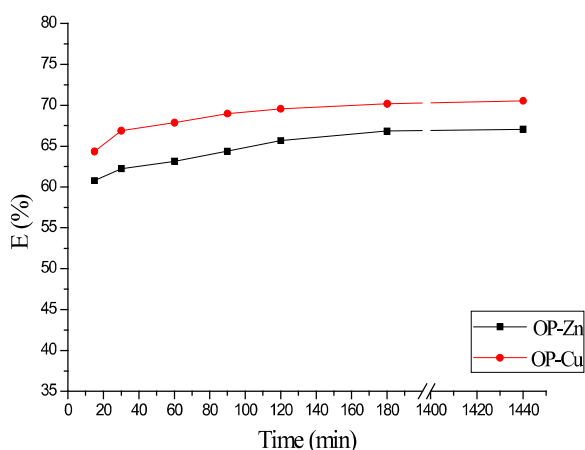
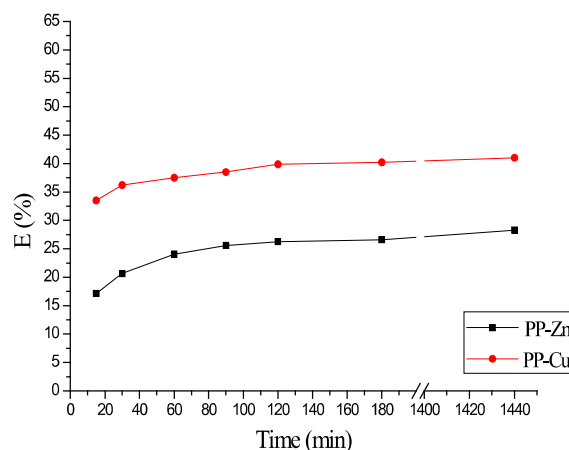


A comparative analysis sorption activity of the initial materials (orange and pomegranate peels) towards TM ions is represented in Figure 1. It can be seen from the graphs that the peels show different adsorption properties for each metal ion. As can be seen from Figure 1 (a) the removal degree of Zn^{2+}

and Cu^{2+} ions reaches about 70 % (67 % and 71 %). The results in Figure 2 (b) show that PP adsorbs copper (II) ions much better than zinc (II) ions (41 % and 28 %). It can be concluded that initial OP has better adsorption properties towards Zn^{2+} and Cu^{2+} ions than initial PP.



a) initial OP



b) initial PP

Figure 1 – Dependence of removal degree (%) of Zn^{2+} and Cu^{2+} ions by initial (a) OP and (b) PP on time ($T = 298\text{ K}$, $C_{in} = 10\text{ mg/l}$)

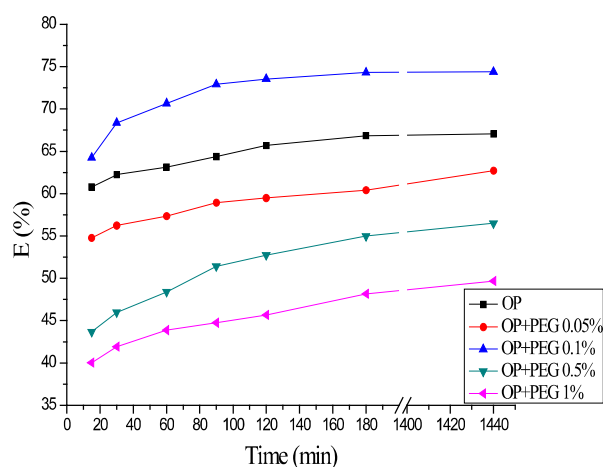
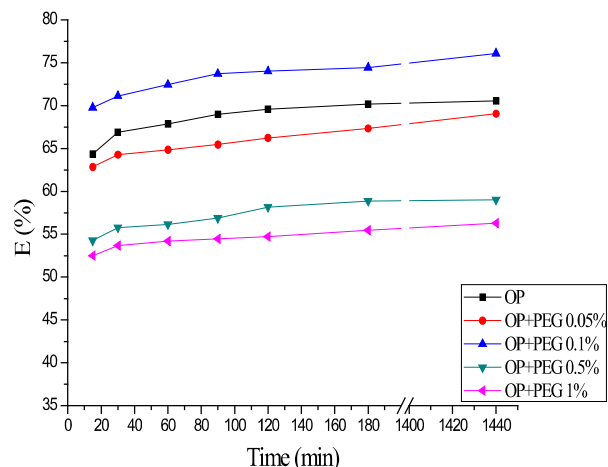
a) Zn^{2+} b) Cu^{2+}

Figure 2 – Dependence of removal degree (%) of (a) Zn^{2+} and (b) Cu^{2+} ions by modified OP at different concentrations of PEG on time ($T = 298\text{ K}$, $C_{in} = 10\text{ mg/l}$)

A comparative analysis of Zn^{2+} and Cu^{2+} ions sorption by modified OP at different concentrations of PEG is represented in Figure 2.

It can be seen from the graphs that the modification of OP by PEG 0.1 % enhanced the sorption

ability of the initial peel. The removal degree of Zn^{2+} and Cu^{2+} reaches 74 % and 76 % respectively. However, in both cases, the other concentrations of PEG are not effective compared to the initial OP. It can be concluded that the 0.05 % concentra-