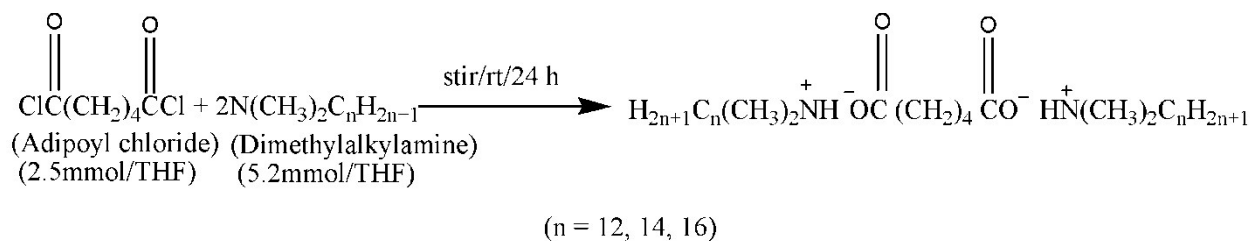
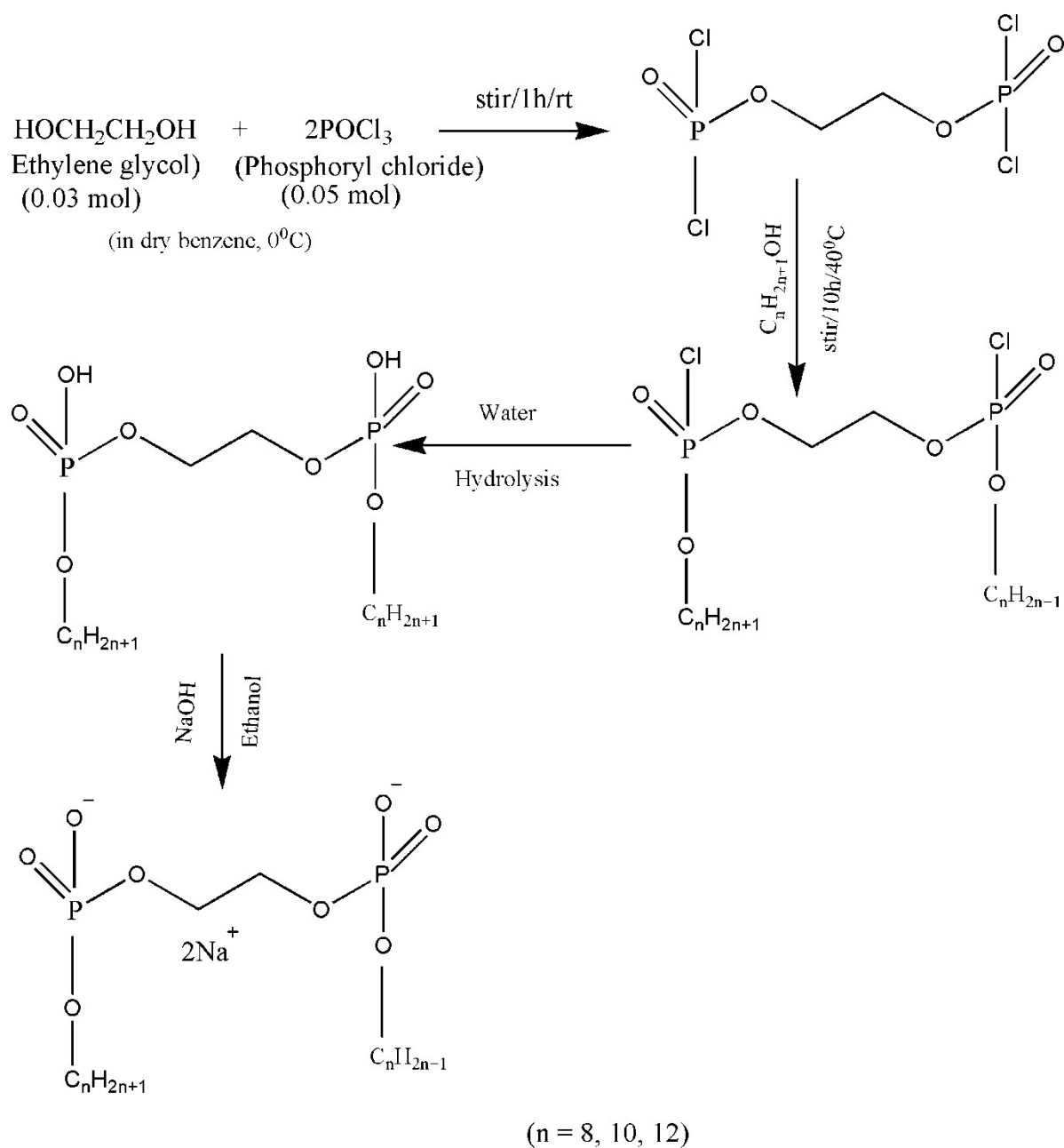


Scheme S1. The synthesis route for asymmetric zwitterionic dimeric surfactants.



Scheme S2. The synthesis route for counterion coupled gemini surfactants.



Scheme S3. The synthesis route for anionic dimeric surfactants.

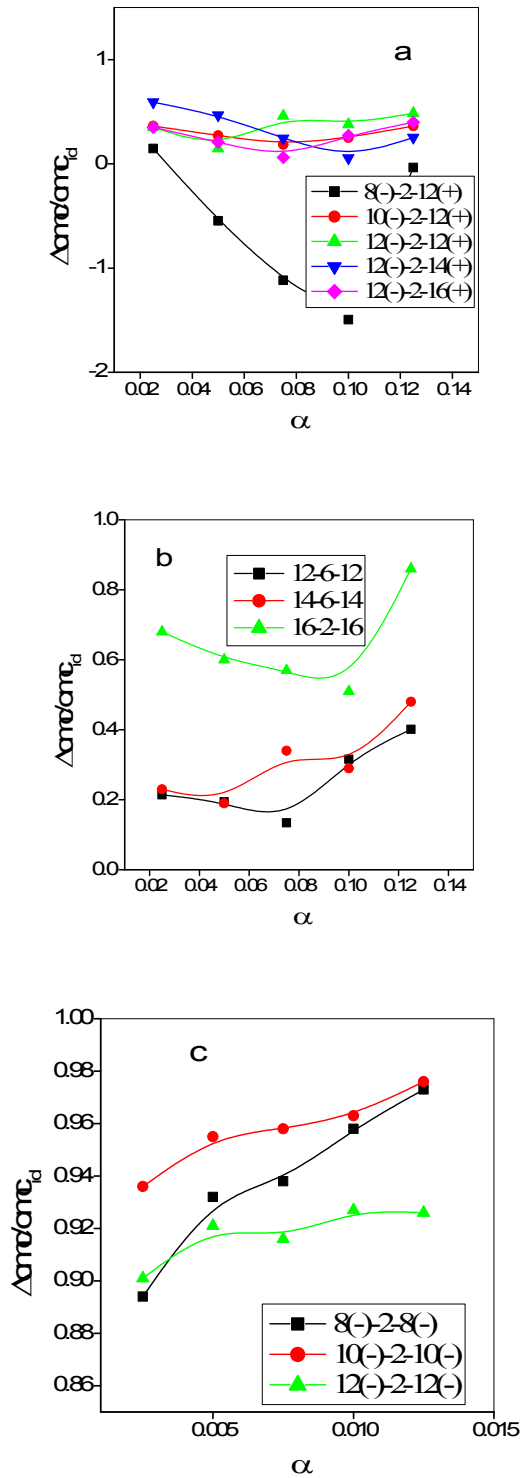
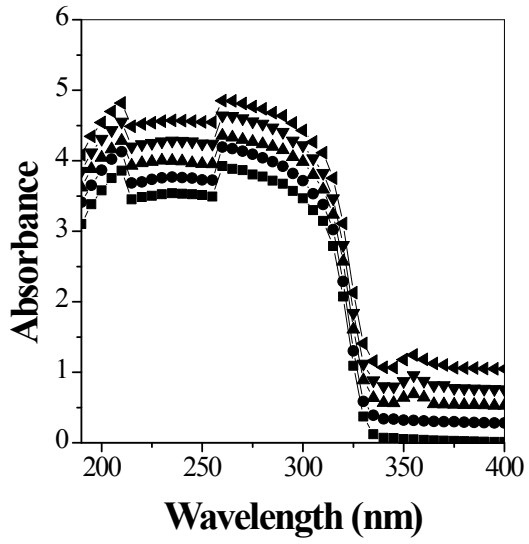
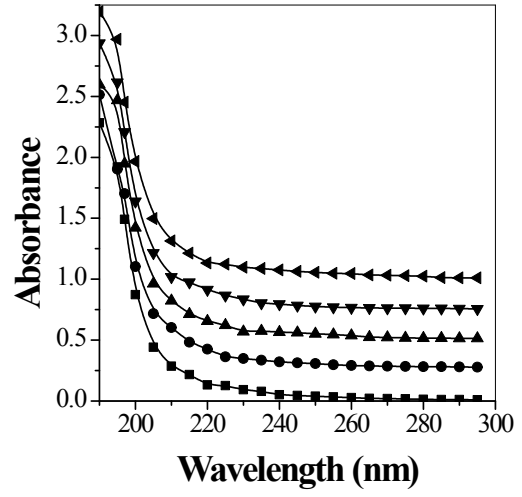


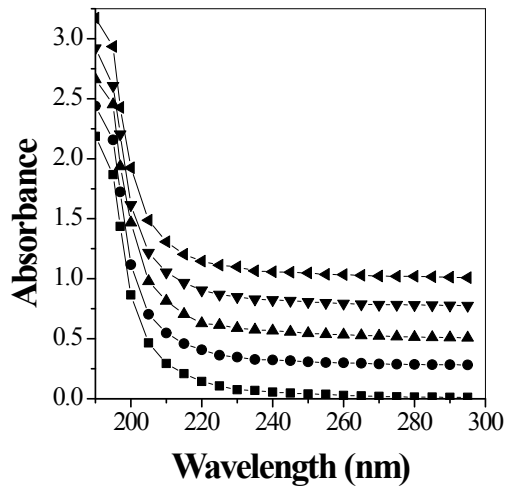
Fig. S1 Variation of equivalent deviation of cmc ($\Delta\text{cmc}/\text{cmc}_{\text{id}}$) with the stoichiometric mole fraction (α) of zwitterionic dimers (a), cocogems (b) and anionic geminis (c) for the surfactant – IMP mixed systems.



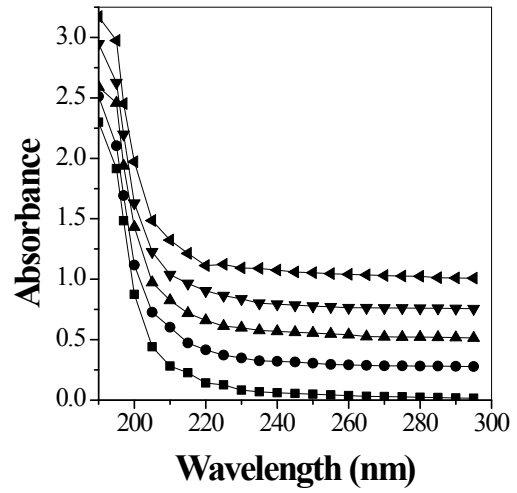
a



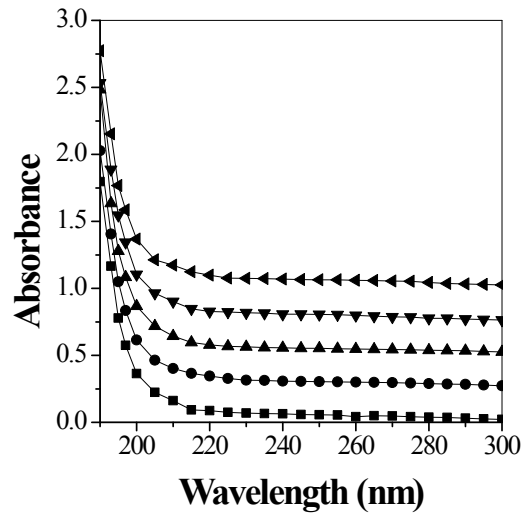
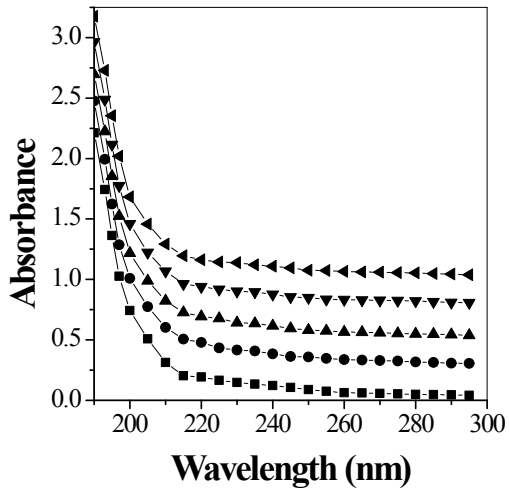
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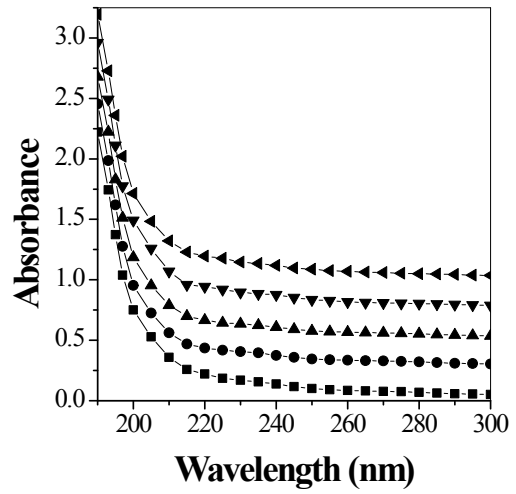
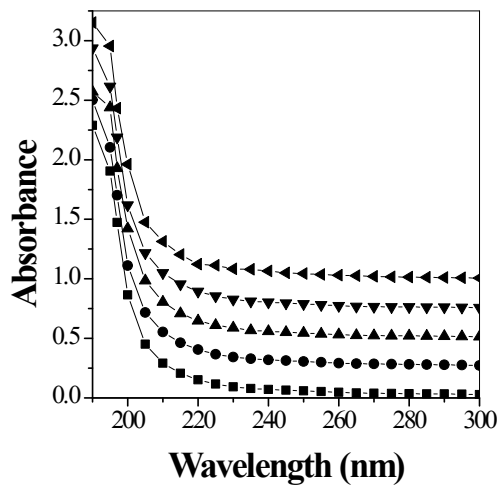


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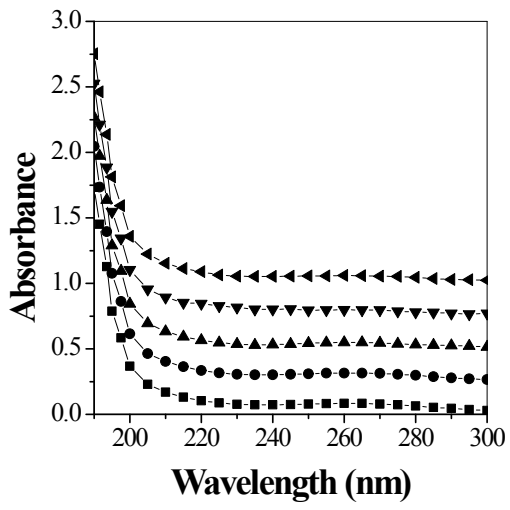
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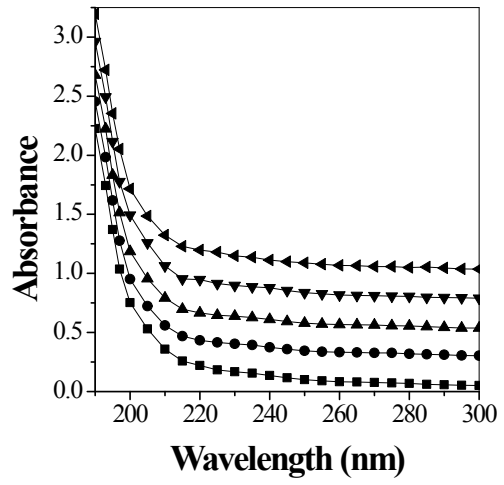


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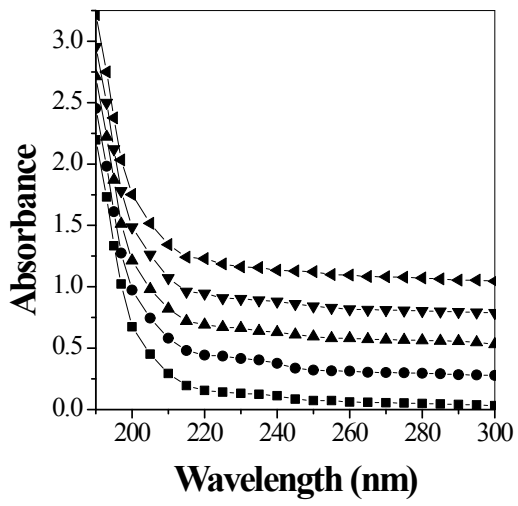
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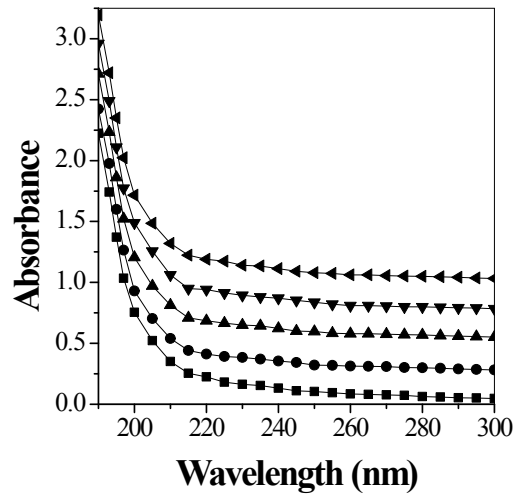
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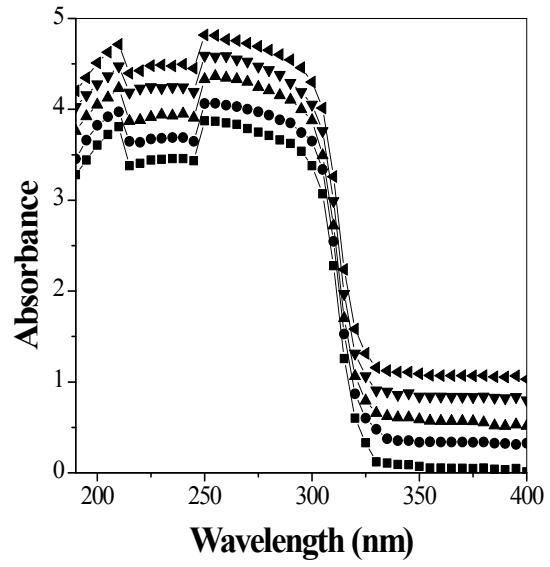
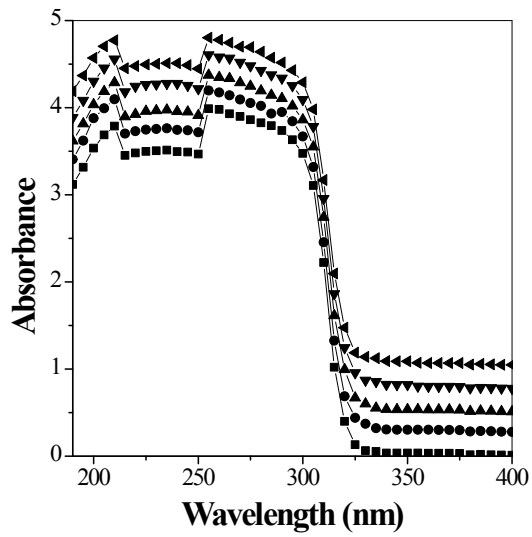
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k

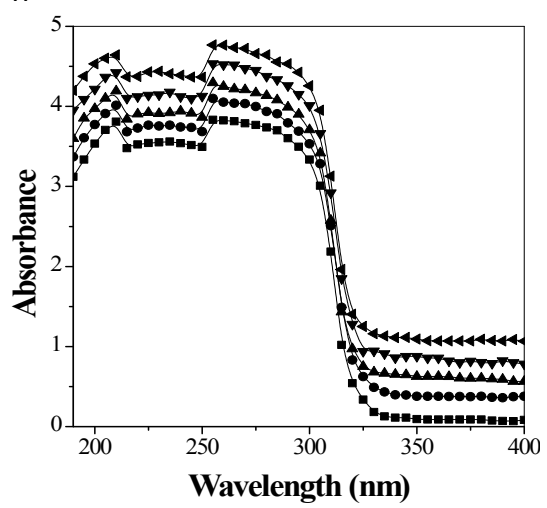
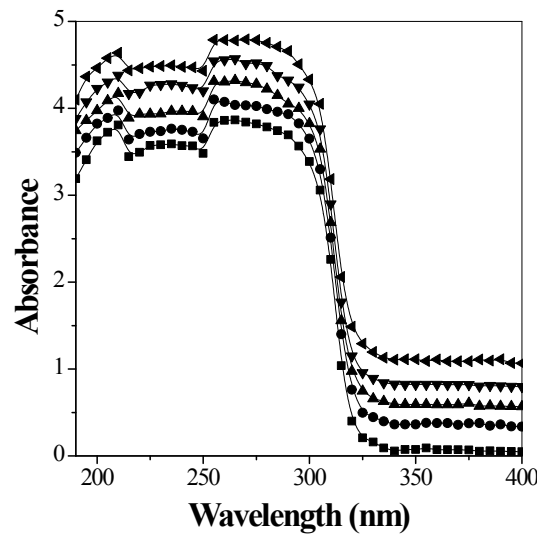


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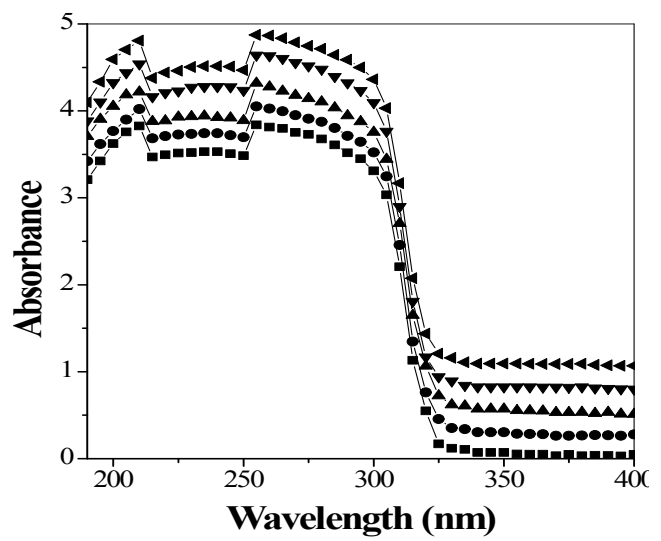
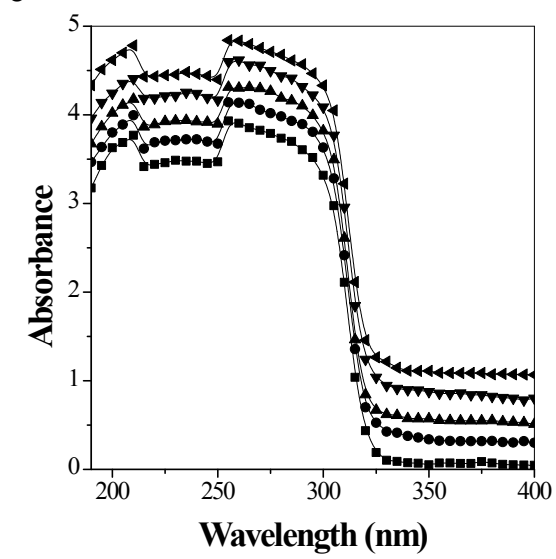
m

n



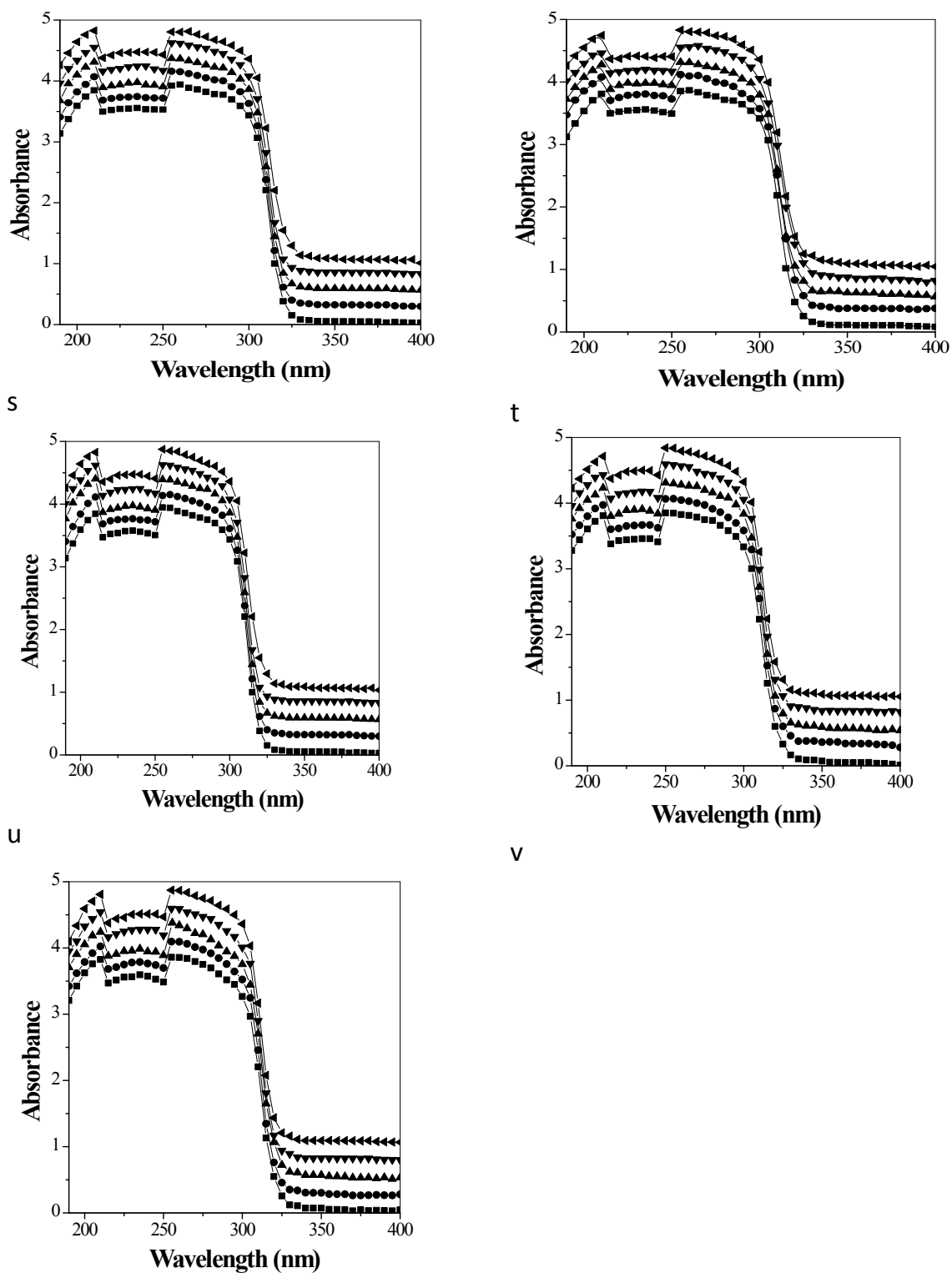
o

p



q

r



w

Fig S2: The UV-vis spectra of Sudan III in pure components (a-l) and in IMP-surfactant mixtures at $\alpha = 0.075$ (for zwitterionic dimerics, m-q); (for cocogems, r-t) and $\alpha = 0.0075$ (for anionic dimerics, u-w), just after preparation (\blacksquare), 3 (\bullet), 7 (\blacktriangle), 15 (\blacktriangledown) and 30 (\blacktriangleleft) days. The y-axis scale is for plot denoted as (\blacksquare). The other plots have been shifted vertically by 0.25, 0.5, 0.75 and 1, respectively. A is for IMP,