



Structure-properties correlation in ternary polymer systems: Developments and future demands

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Course description:

The story of ternary blends goes back to two decades ago, when Hobbs et al. developed systems showing multifarious microstructures by manipulating composition and the type of parent polymers. The excellence of such systems with respect to polymer pairs was concerned with the possibility of morphological manipulation, through which giving access to systems with the potential to give a wide range of properties. From the beginning, some complexities were associated with identification of the type of morphology in the ternary polymer blends. The theoretical explanation of the dominant type of morphology based on interfacial tension of possible polymer pairs brought some insights on the evolution of morphology, where establishment of a relationship between the viscosity ration and microstructure was in parallel in the way of exploration. Later, some talked about theoretical prediction of microstructure by developing new relations, in which the effect of composition of minority phase was included beside the interfacial tension. Nevertheless, the use of fundamental models capable of tracking mechanical properties of ternary blends was somehow tricky when experimental data have been compared with model predictions. We recently published some papers to shade more lights on the morphology-properties correlations in the ternary polymer systems and this short course will give some more insights about the status of this research area and future demands.

Syllabus of the lecture subjects (enlisted):

1. An introduction to ternary polymer blends
2. On the morphology of ternary systems through the lens of interfacial phenomena
3. Models predicting the morphology and
4. Theoretical evaluation of mechanical properties
5. Quantifying interfacial adhesion in the ternary blends
6. Morphology-mechanical properties relationship
7. The distance between prediction and reality
8. Future demands



TERMINY ZAJĘĆ			
Data	Dzień tyg.	Godz.	Sala
2015-06-08	poniedziałek	9-12	Luwr (Chemia A)
2015-06-09	wtorek	9-12	Luwr (Chemia A)
2015-06-10	środa	9-12	Luwr (Chemia A)
2015-06-11	czwartek	9-12	Luwr (Chemia A)
2015-06-12	piątek	9-12	Luwr (Chemia A)