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**VABILO NA PREDAVANJE  
V OKVIRU DOKTORSKEGA ŠTUDIJA  
KEMIJSKE ZNANOSTI**

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z naslovom:

**Surfactant-cyclodextrins host-guest  
supramolecular structures**

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## **Abstract**

Cyclodextrins are able to act as host molecules in supramolecular chemistry with applications ranging from pharmaceuticals to detergency. Among guest molecules surfactants play an important role with both fundamental and practical applications. The formation of cyclodextrin/surfactant host-guest compounds leads to an increase in the critical micelle concentration and in the solubility of surfactants. The possibility of changing the balance between several intermolecular forces, and thus allowing the study of, e.g., dehydration and steric hindrance effects upon association, makes surfactants ideal guest molecules for fundamental studies. Therefore, these systems allow for obtaining a deep insight into the host-guest association mechanism. Here, we review the influence on the thermodynamic properties of *CD*-surfactant association by highlighting the effect of different surfactant architectures (single tail, double-tailed, gemini and bolaform), with special emphasis on cationic surfactants. This is complemented with an assessment of the most common analytical techniques used to follow the association process. The applied methods for computation of the association stoichiometry and stability constants are also reviewed and discussed; this is an important point since there are significant discrepancies and scattered data for similar systems in the literature.

In general, the surfactant-cyclodextrin association is treated without reference to the kinetics of the process. However, there are several examples where the kinetics of the process can be investigated, in particular those where volumes of the *CD* cavity and surfactant (either the tail or in special cases the head group) are similar in magnitude. This will also be discussed.