

STSM: Thermodynamic study of the micellization process of functionalized surface-active ionic liquids for extraction of technologically critical elements

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Motivation

The purpose of this STSM was to investigate the thermodynamic properties of the micellization process of functionalized, surface-active IL (SAIL) for extraction of targeted TCE belonging to lanthanides.

This research is a result of cooperation between the three research groups from:

University of Novi Sad - Prof. Gadžurić Slobodan, Prof. Milan Vraneš and dr Snežana Papović - design and synthesis of task-specific ILs;

University of Ljubljana - Prof. Marija Bešter-Rogač, dr Bojan Šarac and Žiga Medoš - determination of thermodynamic properties of the micellization;

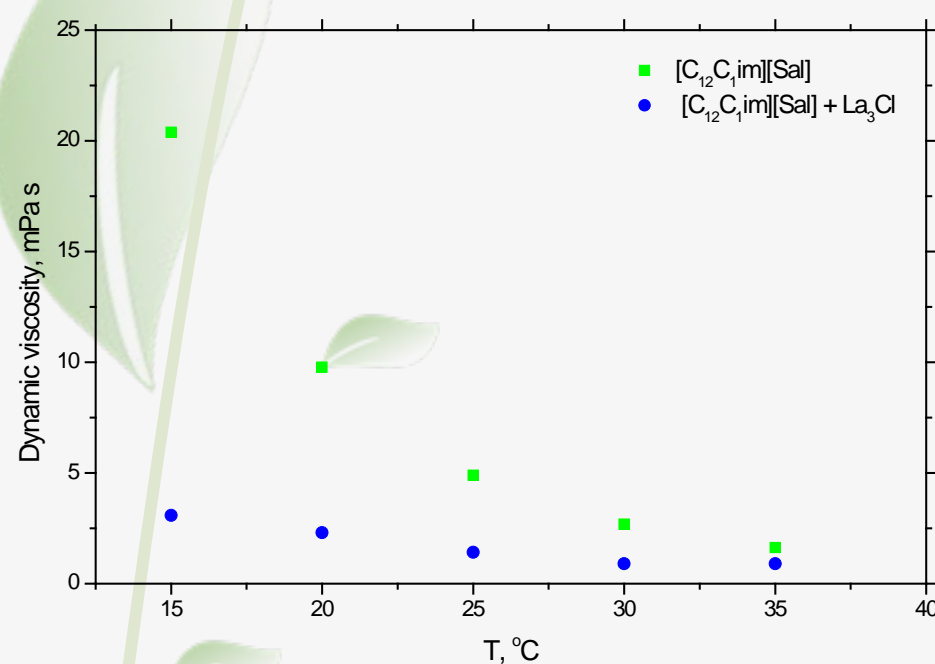
Vinča Institute - dr. Tatjana Trtić-Petrović - extraction of TCE.

Designed and synthesized ILs

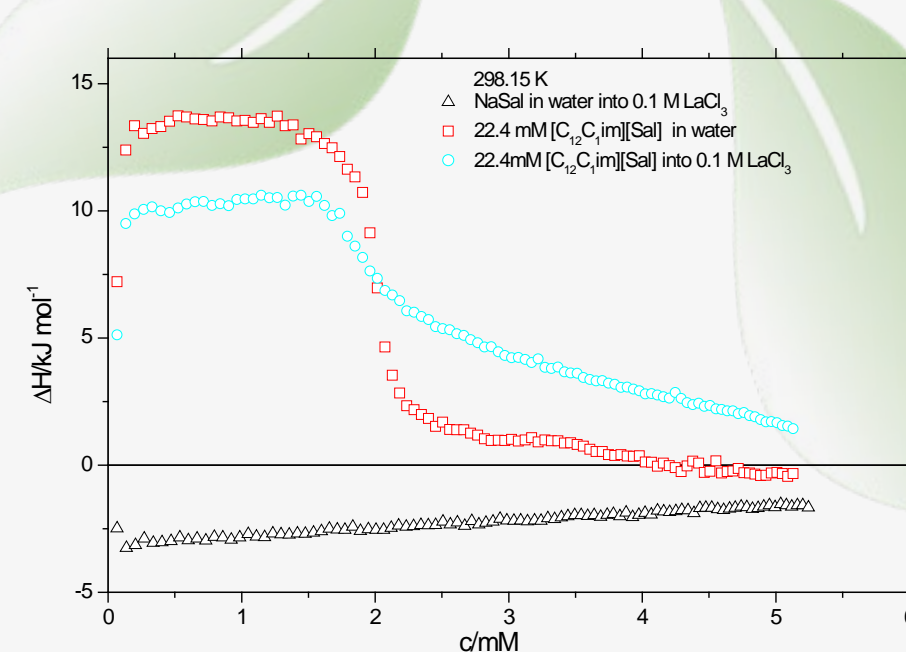
SAILs	Shortcut	Cation	Anion
1-dodecil-3-methylimidazolium salicylate	[C ₁₂ C ₁ im][Sal]		
1-dodecyl-3-methylimidazolium thiosalicylate	[C ₁₂ C ₁ im][ThioSal]		
1-dodecyl-3-methylimidazolium anthranilate	[C ₁₂ C ₁ im][Ant]		
1-dodecyl-3-methylimidazolium 2-picolinate	[C ₁₂ C ₁ im][Pic]		
1-dodecyl-3-methylimidazolium nicotinate	[C ₁₂ C ₁ im][Nic]		

Results

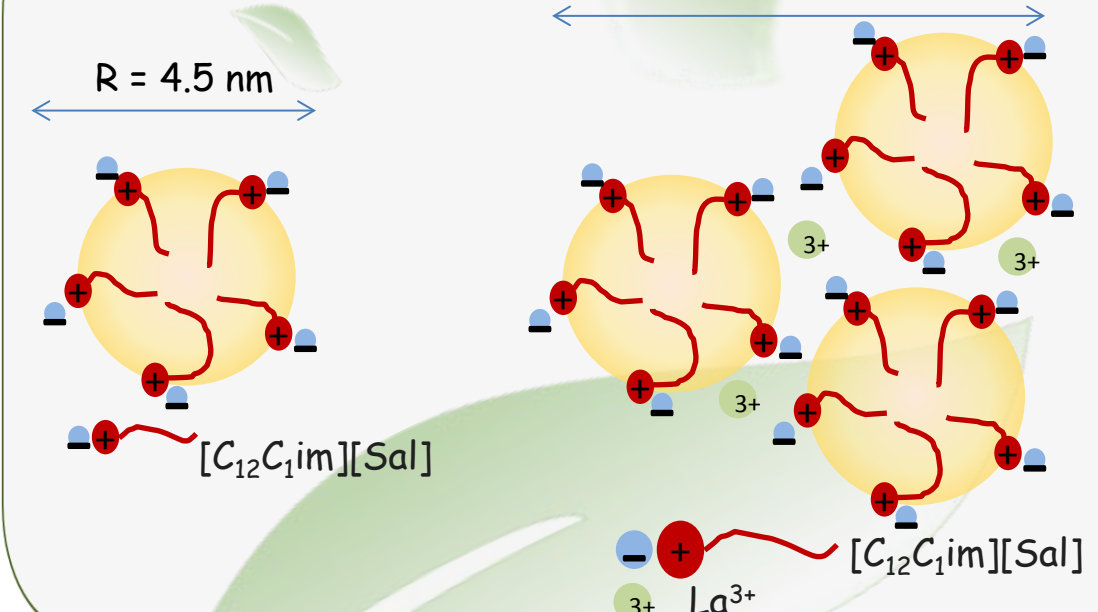
The effect of La(III) on dynamic viscosity of SAIL



Enthalpograms for [C₁₂C₁im][Sal] in water and in LaCl₃



The effect of La(III) on hydrodynamic radius of micelles



Experiments
will be
continued

In addition to
the research,
STSM has a
cultural and
social part

