## Modifying Effect of Imidazolium-Based Ionic Liquids on Surface Activity and Self-Assembled Nano Structures of Sodium Dodecyl Sulfate (SDS)

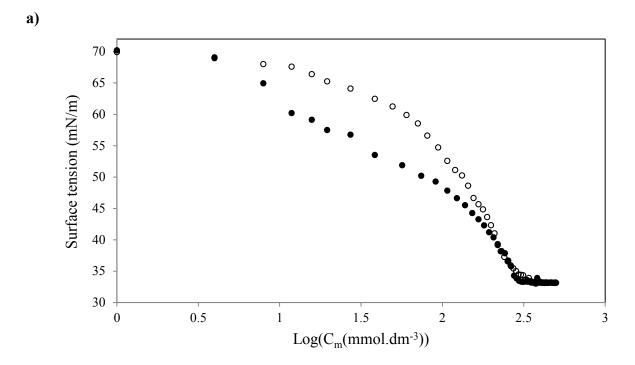
Soheila Javadian<sup>a,\*</sup>, Fayezeh Nasiri<sup>a</sup>, Akbar Heydari<sup>a</sup>, Ali Yousefi<sup>a</sup> and Afshin Asadzadeh Shahir<sup>a,b</sup>

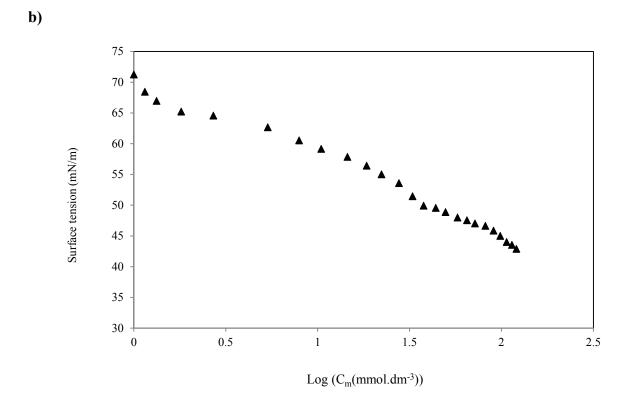
<sup>a</sup> Department of Chemistry, Faculty of Science, Tarbiat Modares University, P.O. Box 14115-175, Tehran, Iran

<sup>b</sup> Division of Chemical Engineering, School of Engineering, The University of Queensland,
Brisbane, 4072 Queensland, Australia

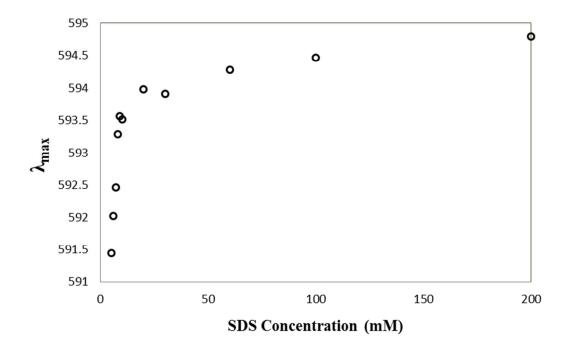
\*Corresponding author e-mail: Javadian\_s@modares.ac.ir

Fax: 0098(21)82883455

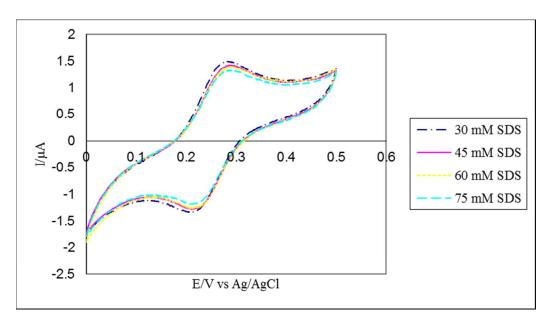




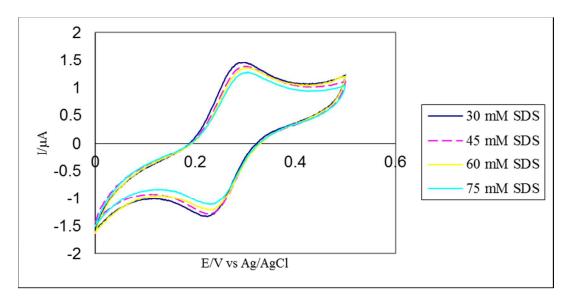
**S.1.** Tensiometric plot of  $(\bullet)$  HMIm Br,  $(\circ)$  HMIm Cl and  $(\blacktriangle)$  BMIm Br



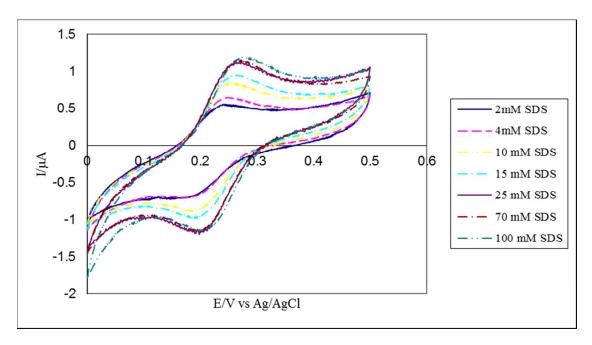
**S.2.** Variation of Crystal Violet maximum absorbance wavelength with SDS concentration in the absence of ILs.



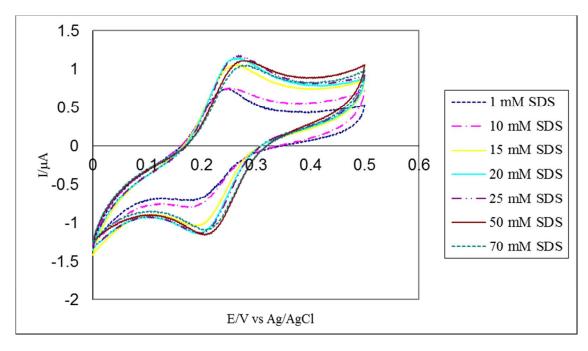
**S.3.** The obtained voltammograms for various SDS concentrations in the presence of 0.5 % w/w of BMImBr. Scan rate is 100 mV s<sup>-1</sup>, [NaCl]= 0.05 M, and T=298 K.



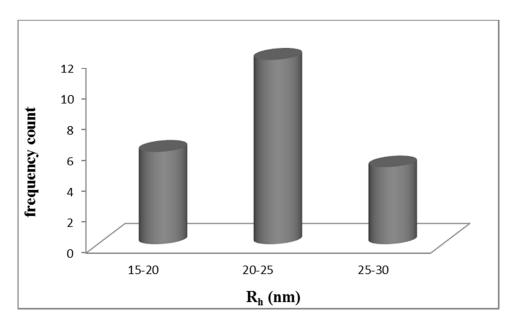
**S.4.** The obtained voltammograms for various SDS concentrations in the presence of 1 % w/w of BMImBr. Scan rate is 100 mV s<sup>-1</sup>, [NaCl]= 0.05 M, and T=298 K.



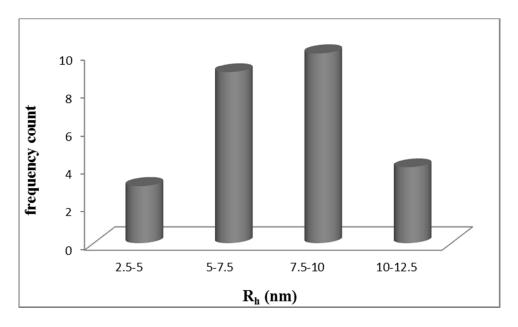
**S.5.** The obtained voltammograms for various SDS concentrations in the presence of 0.5 % w/w of HMImBr. Scan rate is 100 mV s<sup>-1</sup>, [NaCl]= 0.05 M, and T=298 K.



**S.6.** The obtained voltammograms for various SDS concentrations in the presence of 1 % w/w of HMImBr. Scan rate is 100 mV s<sup>-1</sup>, [NaCl]= 0.05 M, and T=298 K.



**S.7.** Size distribution of the aggregates extracted from the TEM image for 7 mM SDS solution in the presence of 1 % w/w of HMImBr



**S.8.** Size distribution of the aggregates extracted from the TEM image for 70 mM SDS solution in the presence of 1 % *w/w* of HMImBr