

Supplementary Material

for

**Extension of eSAFT-VR Mie Equation of State from aqueous to non-
aqueous electrolyte solutions**

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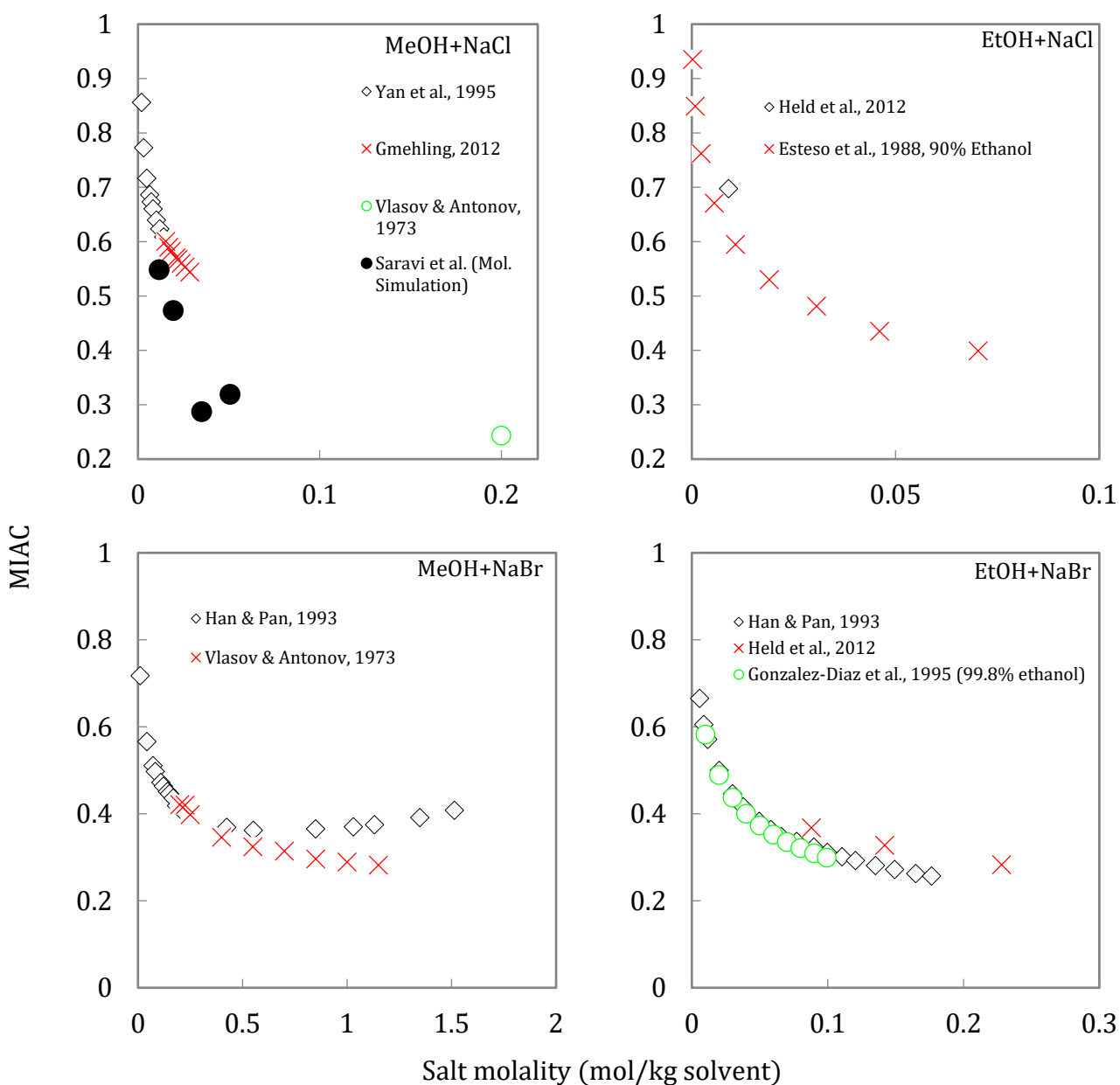


Figure S1. Comparison of experimental MIAC of NaCl and NaBr in pure MeOH and EtOH. References for the experimental data are provided in Table 3.

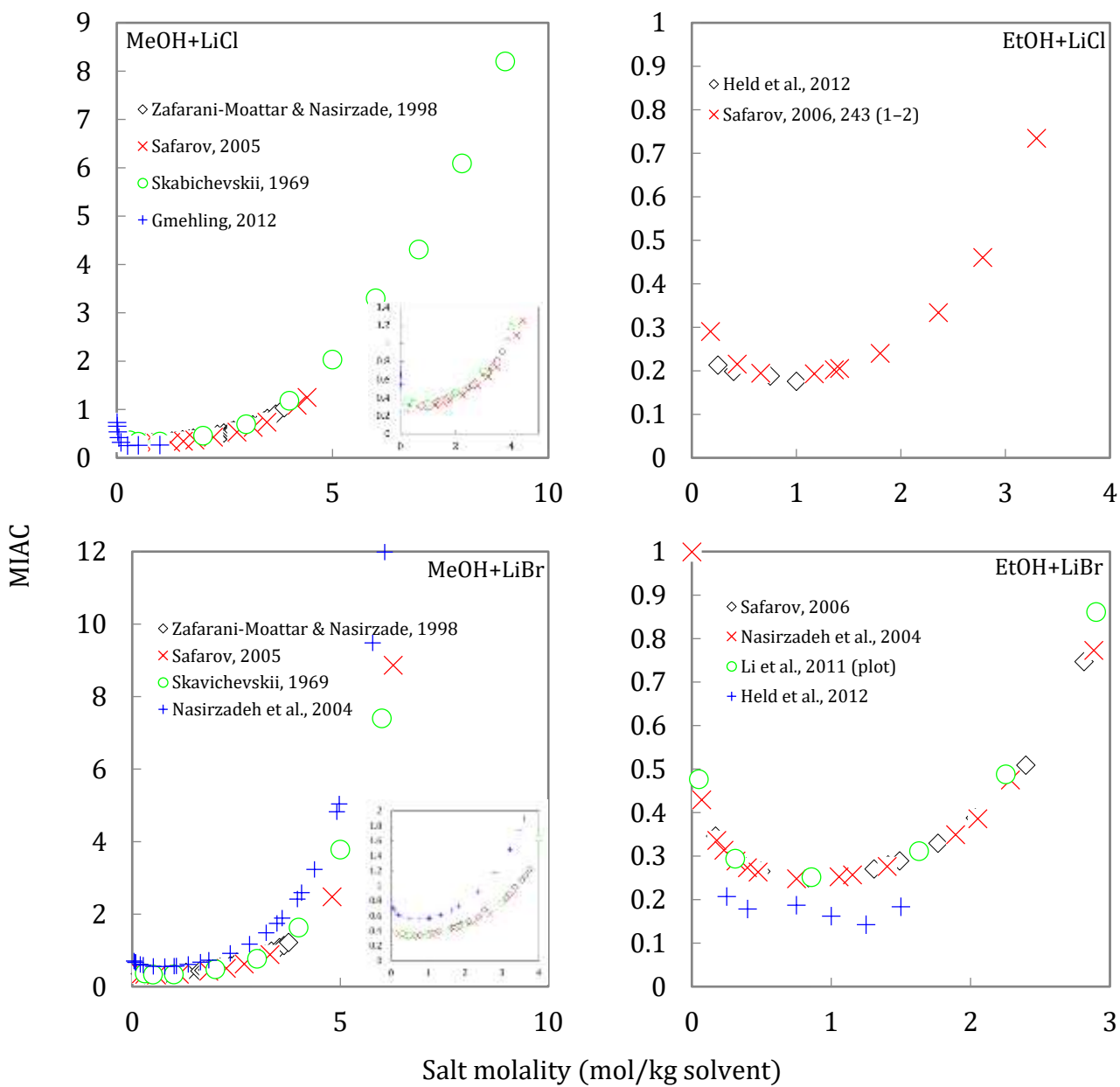


Figure S2. Comparison of experimental MIAC of LiCl and LiBr in pure MeOH and EtOH. References for the experimental data are provided in Table 3.

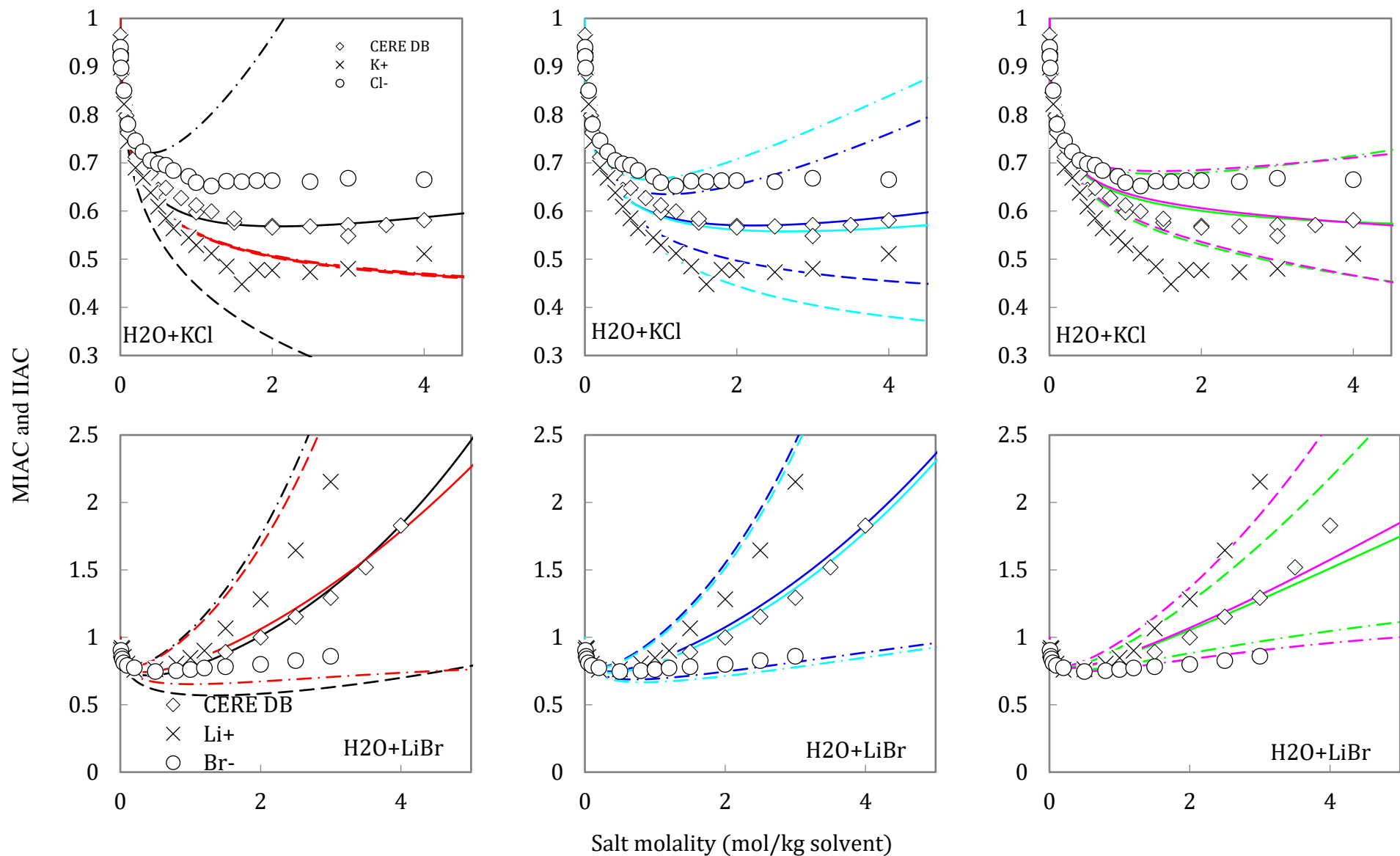


Figure S3. MIAC and IIAC in aqueous solutions with the eSAFT-VR Mie EoS using different approaches for the relative permittivity and the parameters of Table 6. Points are experimental MIAC data from the CERE database [1] or IIAC from Wilczek-Vera et al. [2]. Lines are model predictions: solid lines correspond to MIAC, dashed lines to cation IIAC and dashed-dotted lines to anion IIAC. Black lines to the model by Selam et al., red to the Constant, blue to the MFMR, HS, light blue to MFMR, RH, green to Zuber et al., HS and pink to Zuber et al., RH.

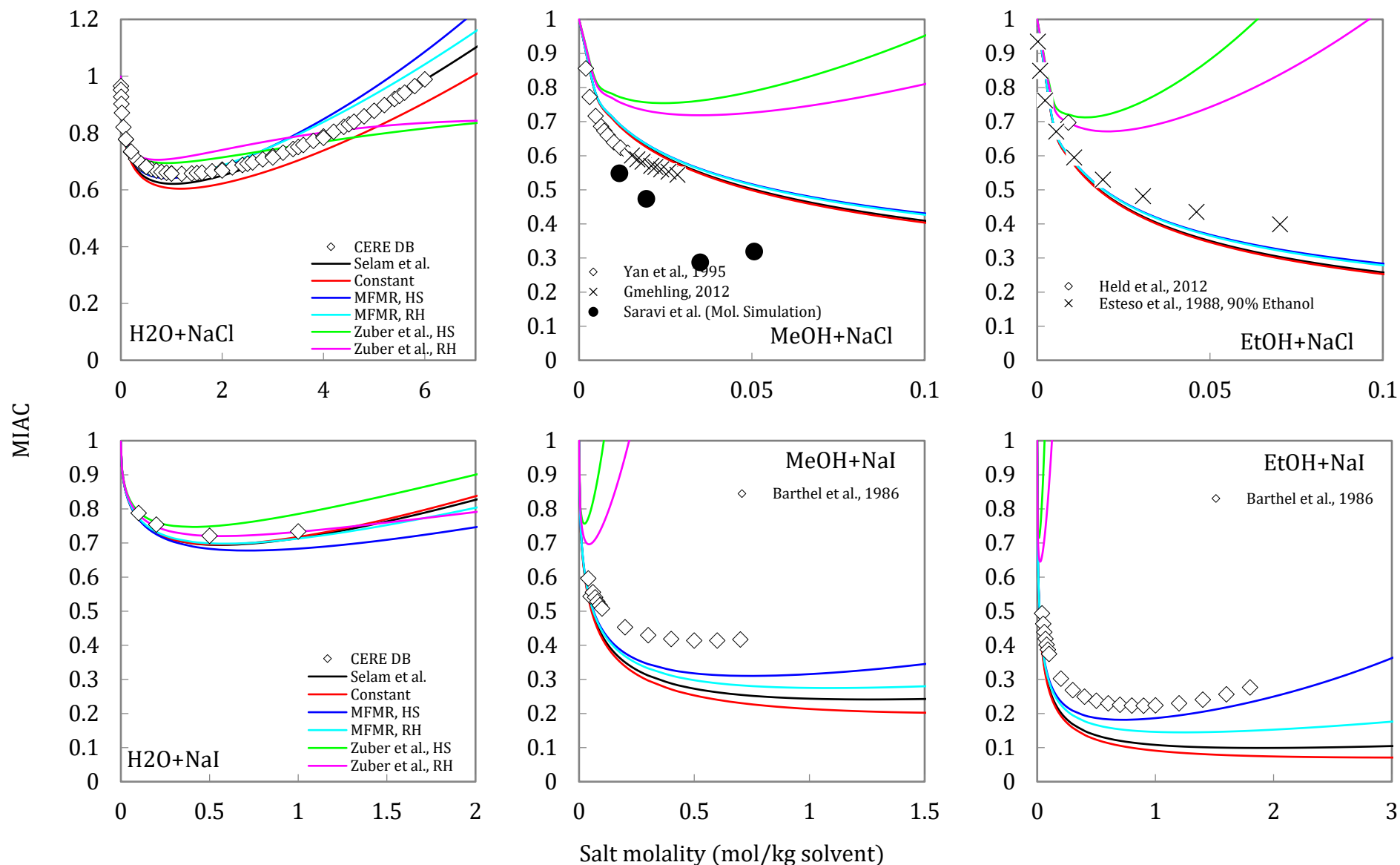


Figure S5. MIAC in single solvent solutions with the eSAFT-VR Mie EoS using different approaches for the relative permittivity. Points are experimental data (references in Table 4), lines are model predictions. Black lines refer to the model by Selam et al., red to the Constant, blue to the MFMR, HS, light blue to MFMR, RH, green to Zuber et al., HS and pink to Zuber et al., RH.

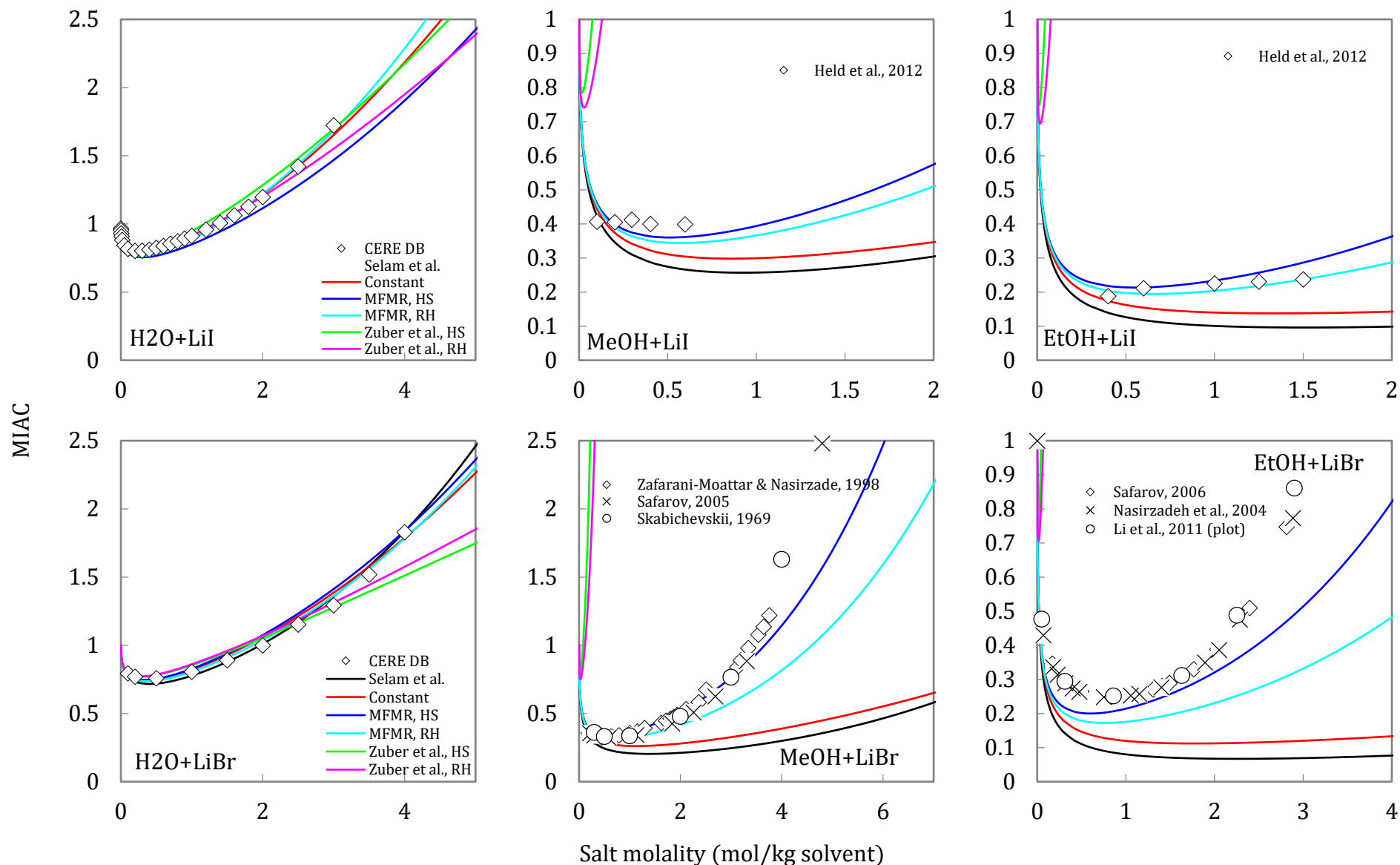


Figure S6. MIAC in single solvent solutions with the eSAFT-VR Mie EoS using different approaches for the relative permittivity. Points are experimental data (references in Table 4), lines are model predictions. Black lines refer to the model by Selam et al., red to the Constant, blue to the MFMR, HS, light blue to MFMR, RH, green to Zuber et al., HS and pink to Zuber et al., RH.

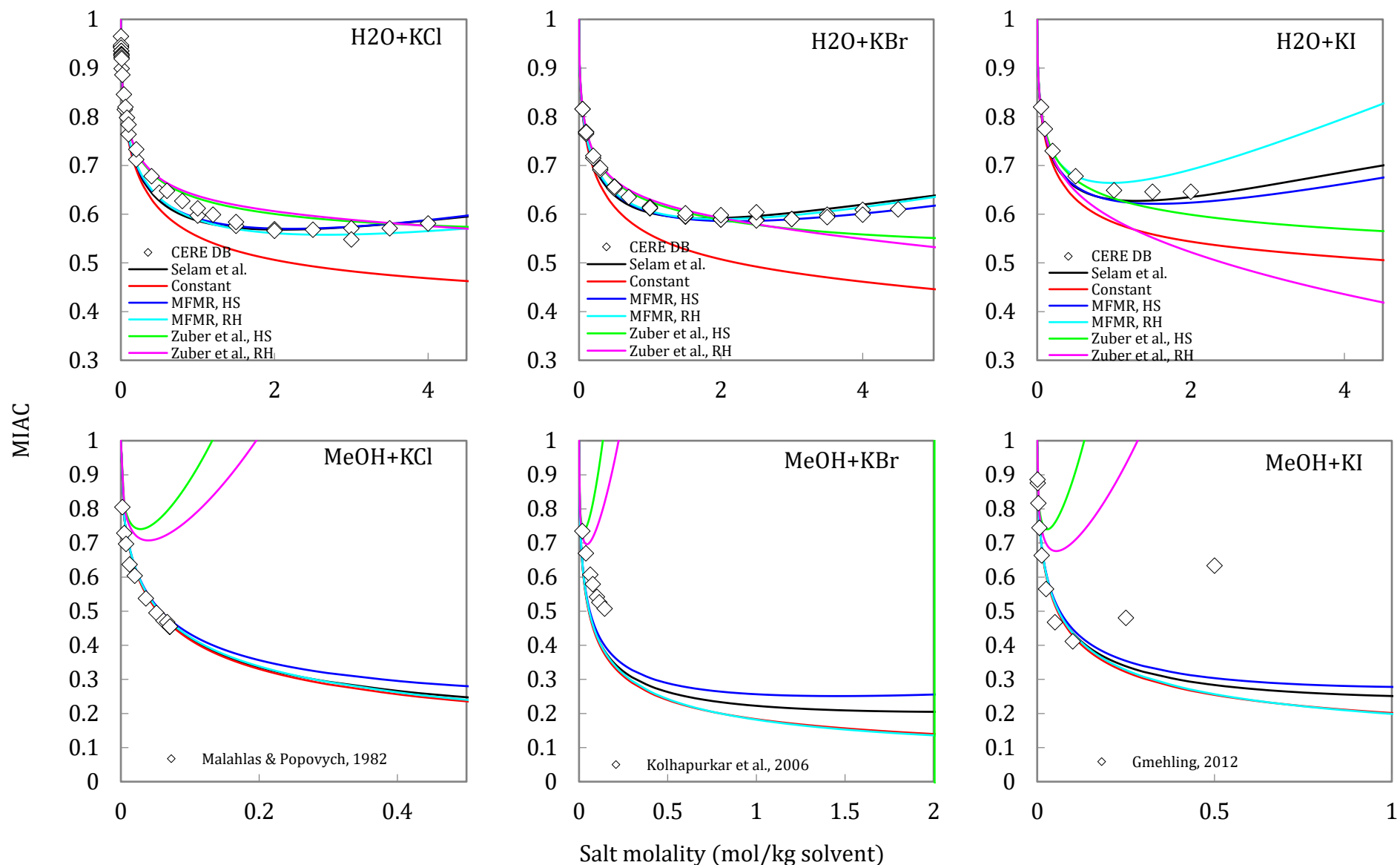


Figure S7. MIAC in single solvent solutions with the eSAFT-VR Mie EoS using different approaches for the relative permittivity. Points are experimental data (references in Table 4), lines are model predictions. Black lines refer to the model by Selam et al., red to the Constant, blue to the MFMR, HS, light blue to MFMR, RH, green to Zuber et al., HS and pink to Zuber et al., RH.

1. References

- [1] K. Thomsen, CERE Electrolyte Database, (2014) Available at <http://www.cere.dtu.dk/Expertise/Dat>.
- [2] G. Wilczek-Vera, E. Rodil, J.H. Vera, On the Activity of Ions and the Junction Potential: Revised Values for All Data, *AIChE J.* 50 (2004) 445–462. <https://doi.org/10.1002/aic.10039>.