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Structure and Conductivity of Ionic Liquids MASON WOODS, LUIS SANCHEZ-DIAZ, University of Tennessee at Chattanooga — With the ever-growing importance of battery power, finding more efficient means of creating batteries is essential and our solution to this is through ionic liquids. Due to the fact that experimentation is very time consuming, we sought to create phase diagrams in order to speed up this process. With the assistance of the SCGLE (Self Consistent Generalized Langevin Equation) theory, we are able to create phase diagrams that can act as maps for these ionic liquids. After conducting our research, we tested the validity of the SCGLE program along with concluding that the area of mixed state within these ionic liquids is the phase in which electricity can be conducted and at increased temperatures conduction is no longer possible. In future research, we would like to explore the capability of calculating conductivity for these ionic liquids, using the SCGLE framework.

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