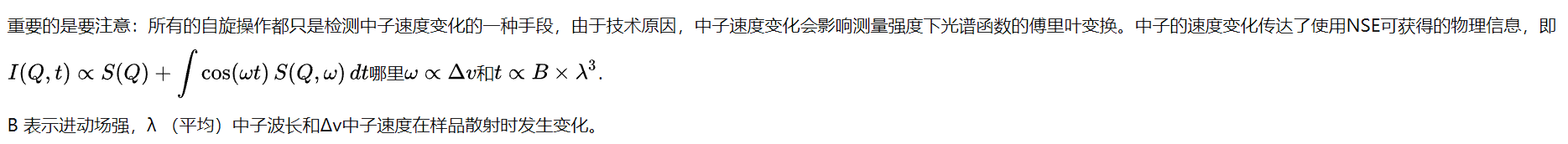
1. What is neutron spin-echo (NSE)?

先解释spin echo：自旋回波或哈恩回波是通过共振电磁辐射脉冲重新聚焦自旋磁化



Neutron spin echo is a time-of-flight technique.

1. What is dielectric spectroscopy?

介电光谱（属于阻抗谱的一个子类别）**测量介质的介电特性**作为**频率**的函数。它基于外部场与样品电偶极矩的相互作用，通常用介电常数表示

1. What is normal mode, alpha-relaxation, and beta-relaxation in polymers?

Normal mode ：正常的运动，有固定的频率和相位关系

弛豫是所考虑的材料减轻应力的过程。α和β弛豫及其重要性取决于我们用于研究的材料的性质。在半结晶聚合物的情况下，α弛豫是熔融，β弛豫是玻璃化转变，而在无定形聚合物的情况下，α弛豫对应于Tg，而β和γ弛豫对应于聚合物链段的曲轴运动（对于环氧树脂，β弛豫通常与甘油基的弛豫有关，而γ弛豫与亚甲基运动有关。

1. What is the purpose of this work, what is the difference it makes in comparison with previous work?

文本

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In the present study, we have investigated PEO:LiTFSI using different techniques such as NSE, as well as dielectric spectroscopy and molecular dynamics (MD) simulations

1. What are found by the NSE measured?

Obviously, the relaxation that we detect in the NSE measurements is much slower than the segmental and other relaxations reported elsewhere

1. What are found by the dielectric spectroscopy measurement?

In addition, the dc resistivity ρdc, deduced from the dielectric measurements, is shown (crosses). It reasonably agrees with the results of the independently measured dc conductivity

The dielectric data also revealed the presence of a secondary process that follows an Arrhenius law with activation energy of 0.29 eV (Fig. 2, open circles and dashed line). In Ref., the relaxation in PEO:LiTFSI was proposed to arise from the local reorientation of the C-O bond dipoles in the polymer chain.

1. What are found from the MD simulation?

This suggests that the Li+ ion spends approximately 4–7 ns within the cage and the hopping process to the next cage occurs much faster, within time scales of 1 ns. The interchain hopping process was also captured from the MD trajectory

图示

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1. What are the conclusions from this paper?

The temperature dependence of the dc conductivity and the dielectric relaxation time is found to be identical, indicating a strong coupling between both.

The fast hopping process from one cage to another plays a significant part in macroscopic conductivity and is found to be the fastest transport process.