

The Impact of Rietveld in Condensed Matter Science

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The field of Condensed matter science is arguably the largest in Physics, if one made the size of literature output the basis of measurement. This is due to the fact that the field encompasses a huge selection of materials and systems, allowing one to study magnetism, superconductivity, quantum critical phenomena among others, with a range of correlation strength in them. Though often undermined and overlooked, the role of Rietveld refinement techniques as used for powder diffraction analysis, is ubiquitous and often necessary to implement at the conception of the study of a new condensed matter system. This does not come by solely on the determination of nuclear structures but also in revealing novel magnetic ground states. As instrumentation, particularly for neutron scattering progresses, we increasingly gain more information about these materials. In this talk, I will give several examples of systems where Rietveld analysis has a crucial role in the success of the study.