

Experimental report

01/07/2024

Proposal: 5-31-2683

Council: 4/2019

Title: Magnetic structure determination of BaCoO₂ by Neutron Powder Diffraction

Research area: Chemistry

This proposal is a new proposal

Main proposer: Aliou DIATTA

Experimental team:

Local contacts: Claire COLIN

Samples: BaCoO₂

Instrument	Requested days	Allocated days	From	To
D1B	1	1	02/02/2020	03/02/2020

Abstract:

Title: Magnetic structure determination of BaCoO₂ by Neutron Powder Diffraction

We propose here to study the temperature dependence of BaCoO₂ (250 K < T < 400 K) which exhibits a chiral structure with P3121 space group analogous to α -quartz where Co²⁺ are all located in tetrahedral environment by neutron powder diffraction in order to determine the magnetic structure of this material. This study is part of the work of Aliou Diatta who has recently defended his PhD thesis. Magnetic measurements data (Fig 1-a), show an antiferromagnetic ordering temperature (T_N=330 K).

The magnetic structure of BaCoO₂ could not be extracted mostly due to the presence of impurities.