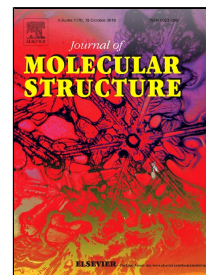


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AN ANALYSIS OF ORTHOPYROXENE FROM TSAREV L5 METEORITE USING X-RAY DIFFRACTION, MAGNETIZATION MEASUREMENT AND MÖSSBAUER SPECTROSCOPY

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14
15 **Abstract**

16 The bulk Tsarev L5 ordinary chondrite powdered matter and chemically extracted
17 orthopyroxene powder were studied using X-ray diffraction, magnetization measurement and
18 Mössbauer spectroscopy. The unit cell parameters for orthopyroxene in the bulk material and in the
19 extracted powder were the same. Magnetization data also showed similar behavior. However, X-ray
20 diffraction and Mössbauer spectroscopy revealed residual iron-bearing phases in the extracted
21 powder such as Ca-rich clinopyroxene, chromite and hercynite which were observed in the bulk
22 matter. Additionally, the minor ferrous and ferric components were found in the chemically
23 extracted orthopyroxene powder.

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27 **Keywords:** Tsarev L5 ordinary chondrite; Orthopyroxene; Mössbauer spectroscopy; X-ray
28 diffraction; Magnetization measurement

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