

*American Mineralogist, Volume 92, pages 687–690, 2007*

**LETTER**

**Onion morphology and microstructure of polyhedral serpentine**

**ALAIN BARONNET,<sup>1,\*</sup> MURIEL ANDRÉANI,<sup>2,†</sup> OLIVIER GRAUBY,<sup>1</sup> BERTRAND DEVOUARD,<sup>3</sup>  
SERGE NITSCHÉ,<sup>1</sup> AND DAMIEN CHAUDANSON<sup>1</sup>**

<sup>1</sup>Paul Cézanne University and CRMCN-CNRS, Campus Luminy, 13288 Marseille cedex 9, France

<sup>2</sup>Géosciences Marines- IGP, Place Jussieu, 75252 Paris cedex, France

<sup>3</sup>Laboratoire Magmas et Volcans, Blaise Pascal University, OPGC, CNRS, 5 rue Kessler, 63000 Clermont-Ferrand, France

**ABSTRACT**

We describe the shape and internal structure of polyhedral spheroids found in serpentized peridotites. Serpentine spheroids resemble geodesic domes made of ~160 to 180 triangular facets. At facet edges, the nested layers bend by ~14° along their three <010> crystallographic directions, resulting in an onion-like structure with lateral continuity of the layers. The stacking of the serpentine layers within sectors is controlled by interlayer bonding. These polyhedral onions correspond to a novel type of spherical nanostructure for layered materials.

**Keywords:** Serpentine minerals, microstructure, onion, spheroid, SEM, TEM