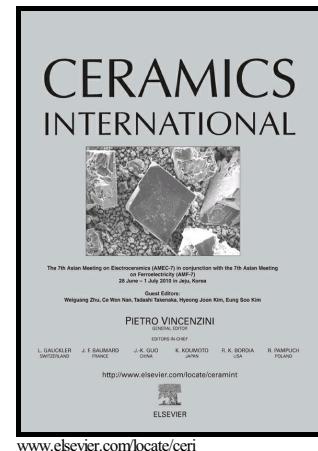


# Author's Accepted Manuscript

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# Porous WS<sub>2</sub> and W<sub>2</sub>N powders by hard templating with colloidal silica

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### Abstract

Meso- and macroporous tungsten disulfide (WS<sub>2</sub>) and tungsten nitride (W<sub>2</sub>N) powders were successfully synthesized by reduction of [WO<sub>3</sub>/colloidal silica] composites under hydrogen sulfide and ammonia gases respectively. The colloidal silica, marketed as Ludox<sup>®</sup>, was used as a hard template and its removal from the composite led to a porosity release. The products were characterized by X-ray diffraction, nitrogen adsorption, mercury porosimetry and electron microscopy. Well-crystallized samples with specific surfaces areas close to ~ 40 m<sup>2</sup>.g<sup>-1</sup> were thus synthesized. The present approach might be easily extended to the synthesis of other nitrides and sulfides materials.

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Keywords: Tungsten disulfide; Tungsten nitride; Surface properties; Colloidal silica; Hard-Template.

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