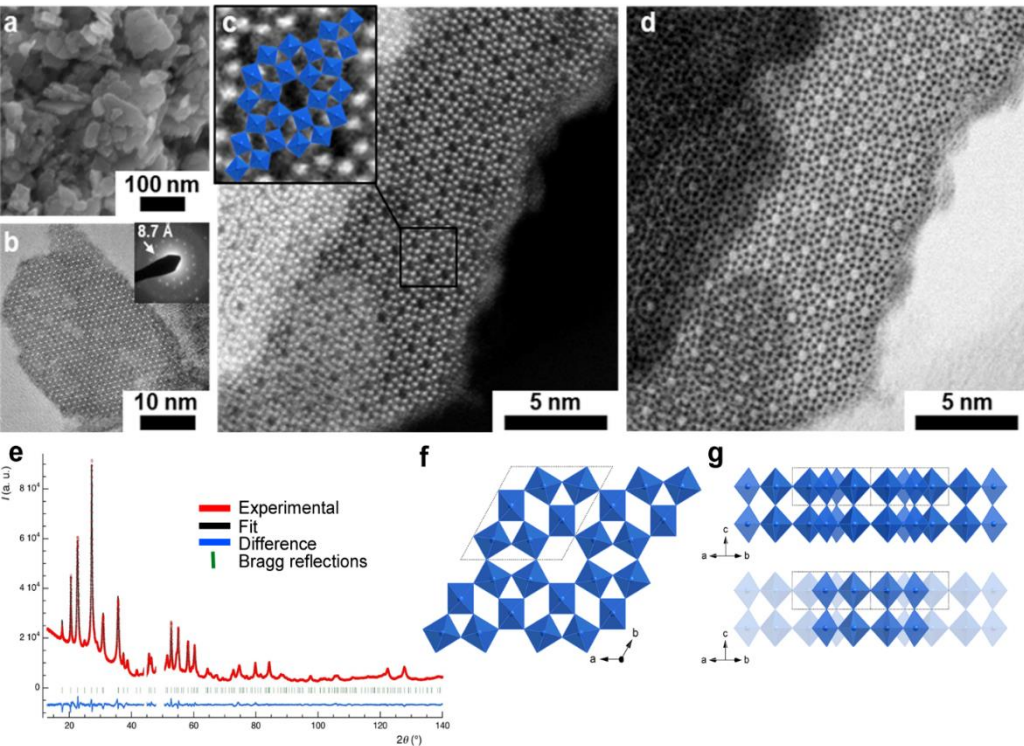


# TUNGSTEN OXIDE



CHEMISTRY / MATERIALS

Ref: MA00178



## MARKET CHALLENGES

In industry, tungsten oxide is currently used to manufacture tungstates for x-ray screen phosphors, as pigment in ceramics and in coating.

In recent years, tungsten trioxide has become one of the most promising inorganic material for electrochromic devices and mainly for smart/ electrochromic windows. It offers several advantages such as: good transmissivity, good cycling stability, low raw material cost and low energy cost. Indeed, electrochromic devices performance depends on structure, morphological surface, optical properties of WO<sub>3</sub> thin films.

## SUGGESTED APPLICATIONS

- Electro chromic devices
- Photo catalytic Applications
- Optical recording devices

## DEVELOPMENT STATUS

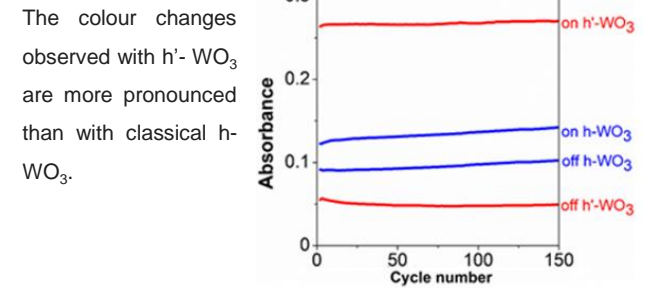
h'-WO<sub>3</sub> has been prepared at laboratory level.

## INNOVATIVE SOLUTIONS

Novel Octahedral Molecular Sieve (OMS) hexagonal polymorph of tungsten oxide called h'-WO<sub>3</sub>, built of (WO<sub>6</sub>)<sub>6</sub> tunnel cavities.

Easy to prepare by a one-step soft chemistry aqueous route, it exhibits an unusual combination of 1-dimensional crystal structure and 2-dimensional nanostructure that ensures enhanced and fastened proton (de)insertion for stable electro chromic devices.

## COMPETITIVE ADVANTAGES



The colour changes observed with h'-WO<sub>3</sub> are more pronounced than with classical h-WO<sub>3</sub>.

## IP RIGHTS

Patent application filed September 2014