

## Article

# Potassium Sulfate: A New Candidate to Explore Non-Photochemical Laser-Induced Nucleation Mechanisms

Mélody Briard <sup>1</sup>, Clément Brandel <sup>1,\*</sup>, Sandrine Morin-Grognon <sup>2</sup>, Gérard Coquerel <sup>1</sup>, and Valérie Dupray <sup>1</sup>

<sup>1</sup> Normandie Université, UNIROUEN, SMS, 76000 Rouen, France

<sup>2</sup> Normandie Université, UNIROUEN, INSA Rouen, CNRS, PBS, 55 rue Saint-Germain, 27000 Évreux, France

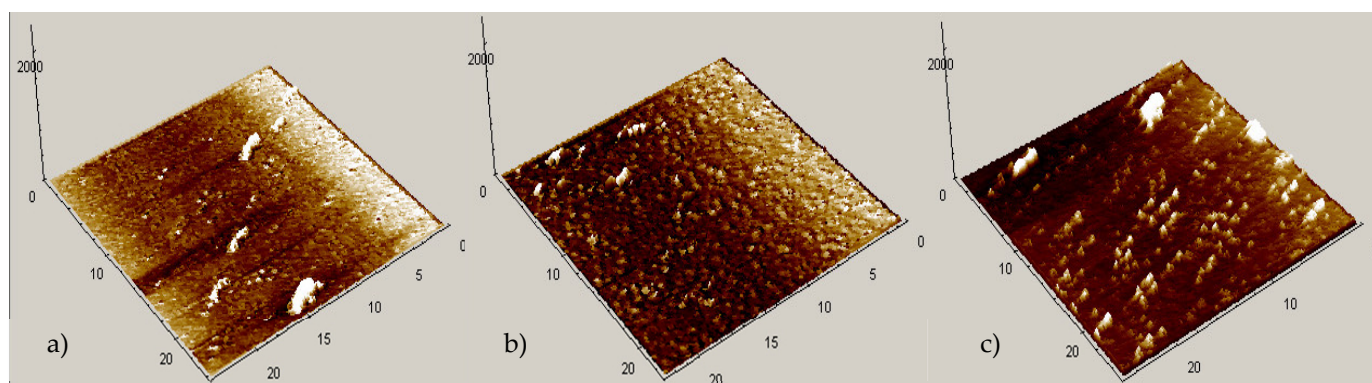
\* Correspondence: clement.brandel@univ-rouen.fr

## Supplementary Information:

### 1. Surface Analysis of the Inner Surface of the Vials

#### a. AFM Analysis

The AFM analysis was conducted in the air contact mode, with a classic pyramid C-probe (0.38N/m), at scanning speed from 0.5 to 1Hz. Images were produced at different scales to obtain a global view of the sample and a more detailed view (Figure S1). The measured roughness values are presented in Table 1; the average roughness (Ra) and maximum roughness (Rz) for the three samples are of the same order of magnitude.



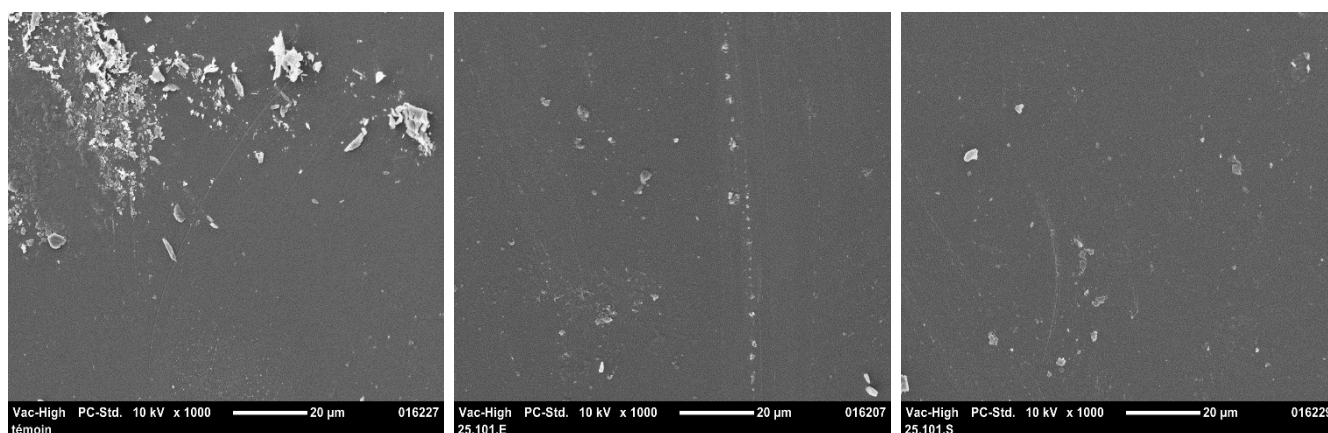
**Figure S1.** 3D representation of the inner surface roughness of the vial measured by atomic force microscopy (AFM): (a) a piece of control vial without any laser exposure; (b) and (c) a piece of vial exposed to 100 pulses at 85.6 mJ, respectively, the entry face and the exit face of the laser beam. The size of the surface analyzed is 25  $\mu\text{m}$   $\times$  25  $\mu\text{m}$ .

**Table S1.** Roughness average (Ra) and maximum roughness (Rz) measured for control vial and irradiated vial (entry face and exit face of the laser beam).

	Roughness average (Ra)	Roughness max (Rz)
Control Vial	7 nm	340 nm
Irradiated Vial (Entry)	18 nm	453 nm
Irradiated Vial (Exit)	20 nm	380 nm

#### b. SEM Analysis

Images were obtained with a Jeol JCM 5000 NeoScope instrument. Glass vial samples were coated with a gold layer prior to analysis (Neo coater MP-19020NCTR).



**Figure S2.** Scanning electron microscopy (SEM) images. From left to right: control vial, vial entry face, and vial exit face of the laser beam.