

## Supplementary Information

### Photoluminescence response in carbon films deposited by pulsed laser deposition onto GaAs substrates at low vacuum

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Figure S1 presents zoom images obtained in the AFM measurements of the film prepared with an irradiation time of 2.5 min as well as the corresponding height histograms, and Figure S2 the corresponding zoom images and height histograms of the film prepared with an irradiation time of 10 min. In the first one, unimodal distribution centered about 50 nm is observed while in the second one, a multimodal distribution with peaks at 30, 40, 50 and 120 nm are evident.

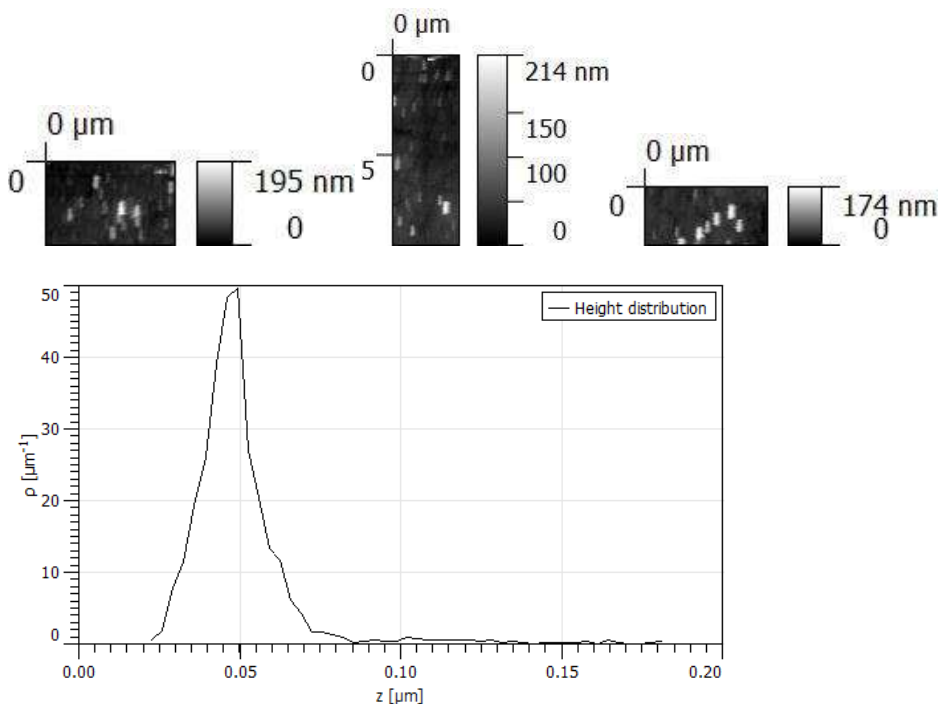


Figure S1. Cuts from 20x20  $\mu\text{m}^2$  AFM images and representative height histogram

Figure S2 presents zoom images obtained in the AFM measurements of the film prepared with an irradiation time of 2.5 min as well as the corresponding height histograms, where nanometric size grains are evident..

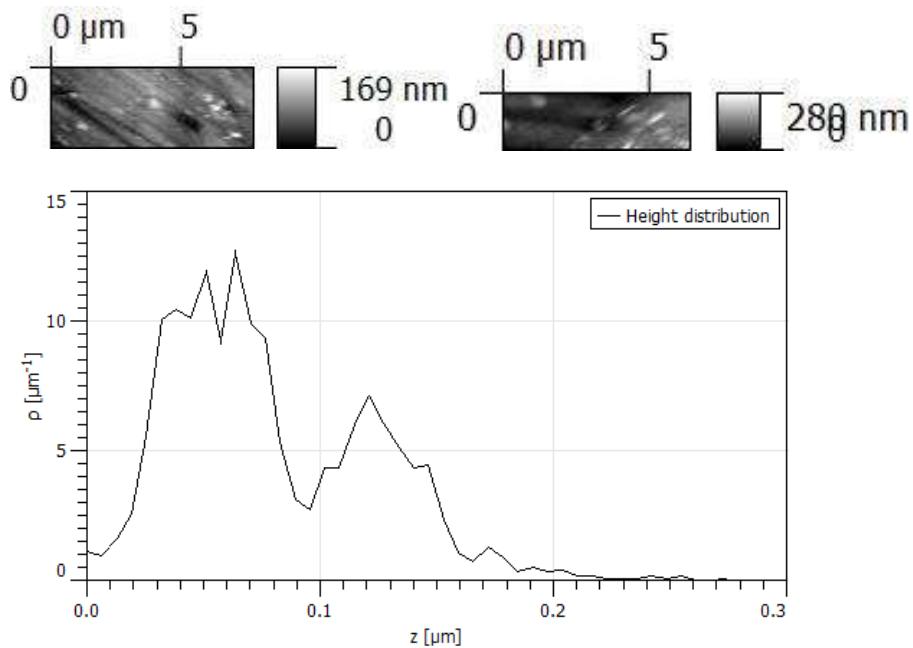


Figure S2. Cuts from 20x20  $\mu\text{m}^2$  AFM images and representative height histogram