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NANOFOAMING DYNAMICS IN BIOPOLYMERS BY FEMTOSECOND LASER  
IRRADIATION

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Irradiation of films of gelatine and collagen with single fs laser pulses produces a nanofoaming layer that can be controlled by wavelength selection. We report on the temporal evolution of the foaming effect by measurements in situ and in real time of the change in the transmittance of a cw probe HeNe laser through the films irradiated with 90 fs pulses at 800, 400 and 266 nm. The morphology of the foam and the chemical changes are also reported. The results allow a better understanding of the mechanisms involved in the fs laser processing of biopolymers of interest in biomedical applications..