

Abstract Submitted
for the MAR06 Meeting of
The American Physical Society

Surface modification of InP wafers by pulsed UV laser radiation below ablation threshold OMAR MUSAEV, UMKC, O.-S. KWON, UMKC, D.-M. ZHU, UMKC, D. WIELICZKA, UMKC, J. WROBEL, UMKC, SURFACXE SCIENCE TEAM — Under multi-pulse laser irradiation below the threshold of ablation modification of surface layer of semiconductor can happen. The creation of point defects may lead to their subsequent aggregation and cause macroscopic damage of the irradiated surface if the number of pulses is large enough despite that the fluency is lower than ablation threshold. Low energy pulsed laser irradiation may also cause different structural changes in the surface layer of a compound semiconductor which manifests itself in changes of physical and chemical parameters of the surface. The surface of InP wafer irradiated by different numbers of pulses with different fluences below ablation threshold was analyzed with AFM and XPS. Mechanisms of defect creation and aggregation in InP surface under low intensity laser irradiation are discussed.

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Date submitted: 23 Dec 2005

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