

ERRATUM | NOVEMBER 12 2014

Erratum: "Influence of boron doping and hydrogen passivation on recombination of photoexcited charge carriers in silicon nanocrystal/SiC multilayers" [J. Appl. Phys. 114, 073101 (2013)] ✓

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Erratum: “Influence of boron doping and hydrogen passivation on recombination of photoexcited charge carriers in silicon nanocrystal/SiC multilayers” [J. Appl. Phys. **114**, 073101 (2013)]

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On September 25, 2014 the authors of the above mentioned paper were informed on the fact that two of the four investigated samples have had actually different fabrication history and consequently different morphology than supposed during the measurements and writing the paper. These samples are Both-B (SRC and SiC layers doped with boron) and SRC-B (boron introduced within the SRC). The boron doping was correct as described in the text; however, the samples were not annealed so that the samples contain rather amorphous phase of SiC than crystalline SiC and Si nanocrystals.¹ That is why the interpretation of the results of measurements done on these two samples and some of the conclusions are not correct. The text should be corrected in places to eliminate the false statements.

In particular:

In the abstract, line 4, it should read “The photoluminescence (PL) intensity of amorphous samples was found... in comparison with the annealed samples.”

In the abstract, line 9, the words “together with the passivation of non-radiative defects by boron” should be omitted.

On p. 1, Subsection A, the last sentence on the page, it should read “After deposition, two samples (labeled as I and SiC-B, see below) were annealed....”

On p. 2, right column, the sentence “It is evident...” should read “It is evident that the PL intensity of the as-deposited samples with B-doped SRC layers is up to two orders of magnitude larger and spectrally red shifted in comparison with that of the annealed samples.”

On p. 3, line 7, the sentence “Doping...” should read “The high intensity PL peak centered at about 750 nm (Figs. 2(b) and 2(d)) is linked with amorphous hydrogenated silicon carbide.” On p. 3, line 11, it should read “Fig. 2 reveals... is doped with boron (and on whether the films were annealed). If the SRC... red shift of PL (in these as-deposited films).

If however... with boron (and the film is annealed), the H passivation....”

On p. 3, left column, paragraph starting “The obtained characteristics...”: the discussion is based on the wrong assumptions and should be omitted.

On p. 3, left column, the last two sentences “As we have no reason...” should be replaced by “The PL of non-annealed samples is not quenched by hydrogen passivation which—with the different spectral position of PL band—indicates origin of PL from different states in annealed and non-annealed samples. The increase in the a-SiC related PL could be attributed to passivation of defect states by hydrogen.”

On p. 3, Subsection B, second sentence, it should read “... much weaker than in non-annealed samples, so that....”

On p. 4, left column, line 3, the words “of the NCs” should be omitted.

On p. 4, right column, line 12, it should read “It is evident... the B-doped samples (both annealed and non-annealed) are much slower....”

On p. 4, Sec. IV, first sentence, it should read “... in Si-NC/SiC multilayers as well as amorphous Si_{1-x}C_x/SiC superlattices.”

On p. 4, Sec. IV, second paragraph, it should read “... the PL signal of the as-deposited samples with B-doped SRC layers....”

On p. 4, Sec. IV, the last two sentences “We attribute... latter samples” should be omitted.

On p. 5, line 11, it should read “The transmission... the B-doped samples (both annealed and non-annealed) are much slower....”

¹M. Kořínek, M. Schnabel, M. Canino, M. Kozák, F. Trojánek, J. Salava, P. Löper, S. Janz, C. Summonte, and P. Malý, *J. Appl. Phys.* **114**, 073101 (2013).

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