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Solid Phase Epitaxial Growth of II-A Fluorides on Semiconductors by In-Situ Rapid Isothermal Processing [J. Electron. Mater. 19, 481 (1990)]

R. Singh, R. P. S. Thakur, and P. Chou
School of Electrical Engineering and Computer-
Science
University of Oklahoma
Norman, OK 73019

J. Narayan
Materials Science Engineering Department
North Carolina State University
Raleigh, NC 27650

A. J. Nelson, S. Gebhard, A. B. Swartzlander and
H. S. Ullal
Solar Energy Research Institute
Golden, CO 80401

Due to the mistake of one of the co-authors (A. Kumar), samples other than those mentioned in the text were used for the XPS study (Fig. 4(a) and (b) of

the original text). At the time of the galley proof, this mistake was identified and corrections were submitted to the publisher. However, these corrections were not incorporated into the publication. Here we present corrected versions of Fig. 4(a) and 4(b) and the discussion of the XPS results. The following text replaces the published material from page 483, first paragraph, line 8 to page 484, first paragraph, line 10.

The Ca 2p and Si 2p core level spectra acquired at the CaF₂/Si interface are presented in Fig. 4(a) and (b), respectively, for the as deposited, ex-situ annealed and in-situ annealed films. The Ca 2p_{3/2} and 2p_{1/2} core level binding energies for the as deposited film are 348.0 eV and 351.5 eV, respectively. These binding energies are consistent with literature values for stoichiometric CaF₂. A small unresolved shoulder at ~346.0 eV may be indicative of Ca-Si covalent bonding or Ca-O bonding. In the case of both the ex-situ and in-situ annealed films, the binding energies of the Ca 2p peaks have

not changed. However, one notices that the shoulder at ≈ 346.0 eV has developed in the spectra for the ex-situ annealed film and thus would imply that this feature is due to a reaction with atmospheric contaminants (*e.g.* O or OH) causing the formation of Ca oxides or hydroxides. Absorption of these gases also hinders solid phase epitaxial growth and thus is responsible for the inferior morphology which was observed.

The Si 2p core level spectra acquired at the CaF_2/Si interface as presented in Fig. 4(b) also supports these conclusions. The Si 2p binding energy at the interface of the as deposited film is 99.0 eV. The shoulder toward the high binding energy side of this peak indicates the presence of SiO_x complexes. In the case of the ex-situ annealed film, one notes the shift of the main Si 2p peak to 99.6 eV which is again indicative of more developed SiO_x phases with an additional feature at 103.7 eV which represents SiO_2 . Clearly the ex-situ anneal causes the formation of these oxides due to the fact that the CaF_2 film is free to react with atmospheric gases (*e.g.* O, H_2O). In the case of the in-situ annealed film, one notes that the major Si 2p line has not shifted from the energy indicative of clean Si. Also, the peak is not as broad as in the case of the as deposited film. The small feature at ≈ 101.8 eV indicates the presence of SiO_x phases although in significantly reduced amounts. Certainly the presence of oxide phases due to absorption of atmospheric gases dur-

ing ex-situ annealing is responsible for the inferior morphology observed for that CaF_2 film.

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Dislocation Filtering: Why it Works, When it Doesn't [J. Electron. Mater. 19, 503 (1990)]

Brian W. Dodson,
Sandia National Laboratories,
Albuquerque, NM 87185

The (*invited*) designation for the above paper was inadvertently omitted during the publication process.

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Theory and Experiment of Capacitance-Voltage Profiling on Semiconductors with Quantum-Confinement [J. Electron. Mater. 19, 521 (1990)]

E. F. Schubert, J. M. Kuo and R. F. Kopf,
AT&T Bell Laboratories, 600 Mountain Avenue,
Murray Hill, New Jersey 07974

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