

Discussion of tasks/research activities in the DMC-line during year 2

- ***Characterization of oxygen-dimer enriched silicon*** This includes characterization of as-prepared materials both before and after irradiation..... Status???
- ***Characterization of high-resistivity Cz-silicon*** Cz-Si is a very interesting approach and the material should be carefully characterized (optically, electrically, chemically, structurally and magnetically (EPR)) before and after irradiation. In particular, the presence and influence of thermal donors should be addressed.
- ***Characterization of irradiated silicon carbide structures*** Detailed point defect characterization of n-type 4H-SiC “detector structures” irradiated with 24 GeV protons should be undertaken.

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- ***Characterization of irradiation-induced defect clusters in silicon*** DOFZ Si exhibits almost no improved radiation hardness for neutrons, in direct contrast to that for γ , π or protons. In the former case more ‘violent’ collisions occur and defect clusters are prominent. Such clusters (e.g., penta- and hexa-vacancies) are poorly characterized and their role as generation/recombination centers should be elucidated. Correlation between PL- and DLTS-results on defect clusters should be made using “identical” samples (that is, the samples are prepared simultaneously and under exactly identical conditions).
- ***Multivacancy-oxygen centers in irradiated silicon*** The activities regarding assignment of the so-called X-center have been quite intense. How about the I-center? The outcome is very crucial in to order to understand and properly model the defect evolution during irradiation (this has strong implications on both the defect engineering and the device modelling).
- ***More....??***