

Key researchers from MUNDFAB co-organized Symposium M: Materials Engineering for Advanced Semiconductor Devices of the E-MRS Spring Meeting, May 29 – June 2, 2023, Strasbourg, France

At the symposium, the following presentations reported on results from the MUNDFAB project:

A. Abdurrazaq, R. Lot, A. Jay, S. De Gironcoli, L. Martin-Samos, N. Richard, A. Hémercyck: Density functional theory study of multi-interstitial defects complexes in germanium, winner of a Best Poster Award of Symposium M

L. Cvitkovich, B. Sklenard, D. Waldhör, L. Jing, C. Wilhelmer, Y. M. Niquet, T. Grasser: Variability in Si spin qubits due to disordered Si/SiO₂ interfaces

G. Calogero, D. Ricciarelli, D. Raciti, P. Acosta-Alba, F. Cristiano, R. Daubriac, R. Demoulin, I. Deretzis, G. Fiscaro, J.M. Hartmann, S. Kerdilès, A. La Magna: Multiscale modeling of ultrafast transformations and structural disorder in laser annealed SiGe nanostructures

R. Daubriac, R. Demoulin, S. Kerdilès, P. Acosta Alba, M. Opprecht, J. M. Hartmann, L. Dagault, P. P. Michałowski, F. Chiodi, O. Adami, D. Débarre, E. Scheid, E. Talbot, A. M. Mio, D. Ricciarelli, G. Calogero, A. La Magna, F. Cristiano: Study on the electrical properties of ultrathin in situ Boron-doped strained Si_{0.7}Ge_{0.3} layers annealed by nanosecond pulsed laser

G. Fiscaro, D. Raciti, G. Calogero, D. Ricciarelli, I. Deretzis, R. Anzalone, G. Morale, D. Murabito, A. La Magna: A simulation workflow to couple the meso and atomistic scale for the CVD epitaxy of Si and SiGe-based structures

C. Jara, J. Lam, A. Hémercyck: Study of interfaces in nickel-based silicides through a multi-level modeling strategy

A. Jay, P. L. Julliard, F. Cristiano, A. Hémercyck: Electronic properties of interstitial atom clusters in silicon and their impact on devices

D. Milardovich, D. Waldhoer, A. Jay, A. Hémercyck, T. Grasser: General purpose machine learning interatomic potential for silicon-germanium

J. Müller, R. Demoulin, F. Cristiano, G. Larrieu: Investigation of the formation of nickel silicides on vertical silicon nanostructured channel for advanced electronics

S. Mundinar, A. Johnsson, P. Pichler, M. Italia, R. Daubriac, P.P. Michałowski, P.L. Julliard, S. Kerdiles, M. Opprecht, J.M. Hartmann, B. Sklenard, A. La Magna, A. Hemeryck, F. Cristiano: Kinetic Monte Carlo simulations of heated boron implantation and non-melt laser annealing in Si and SiGe layers

D. Ricciarelli, G. Mannino, I. Deretzis, G. Calogero, G. Fiscaro, R. Daubriac, R. Demoulin, P. Michałowski, J. M. Hartmann, S. Kerdilès, P. Acosta-Alba, A. La Magna: Impact of solid and liquid phase reflectivity on the ultrafast laser melting of silicon-germanium alloys

C. Rossi, J. Müller, P. Pichler, E. Bär, G. Larrieu: TCAD process simulation of self-limiting oxidation of silicon nanowires

D. Waldhoer, C. Schleich, J. Michl, T. Grasser: A multiscale modeling approach for revealing defects relevant in charge trapping related phenomena

C. Wilhelmer, D. Milardovich, D. Waldhoer, L. Cvitkovich, M. Wautl, T. Grasser: Charged intrinsic defect states in amorphous Si₃N₄