Abstract Submitted
for the DPP15 Meeting of
The American Physical Society

Diagnostics of Nanodusty Plasma[1] FRANKO GREINER, SEBASTIAN GROTH, BEJAMIN TADSEN, ALEXANDER PIEL, Christian-Albrechts-Universität zu Kiel — The diagnostic of nanodusty plasmas, i.e. plasmas including nano-sized dust particles, is a challenging task. For both, the diagnostic of the nanodusty plasma itself, and the in-situ diagnostic of the nanoparticles, no standard diagnostic exist. Nanodust particle size and density can be estimated using light scattering techniques, namely kinetic Mie ellipsometry and extinction measurements. The charge of the nanoparticles can be estimated from the analysis of dust density waves (DDW). Parameters like the electron density, which give information about the plasma itself, may be deduced from the DDW analysis. We present detailed investigations on nanodust in a reactive Argon-Acetylene plasma created in an rf-driven parallel plate reactor at low pressure using the above mentioned portfolio of diagnostic.

[1]Funded by DFG under contract SFB TR-24/A2.

Franko Greiner
Christian-Albrechts-Universität zu Kiel

Date submitted: 22 Jul 2015 Electronic form version 1.4