ST Internship proposal

Division	Automotive Division Group
Group	Smart Power Solutions RnD
Title of the Internship Project	Design of high performance ADC in scaled BCD technology
Description of the Thesis work (tasks that the student will be performing, objectives of the position)	Design of a fast pipeline ADC in scaled BCD technologies
Field of application and competence development	Accurate and fast voltage monitoring is crucial in latest Automotive devices for newest electric and hybrid cars: precise balancing of battery cells during charging phase, monitoring of sensor signals, sensing of MCU supply lines for diagnostics are part of the applications where fast conversions are requested both for proper reaction in case of faults, both to allow muxing of several inputs reducing MCU calculation steps. In this thesis, we propose the development of a pipeline ADC in BCD technology to deal with fast conversion requirements. Student will acquire competences in a2d converters and automotive application topics, basics of mixed signal design in latest BCD technologies, learning usage of latest CAD simulation tools and methodologies (cadence framework and Simulink among others) together with strong analog design skills.
Profile related to the position	• Basic analog structure knowledge (band-gap reference, current mirrors, operational amplifiers, compensation methods) • Strong knowledge of transistor level analog electronic concepts (noise, matching, offset, bandwidth) • Basic Knowledge of ADC architectures • Cadence design suite or equivalent spice simulation experience is a plus
Location	Cornaredo (MI)
Company Tutor	V. Bendotti, M. Landini
Duration (at least 720 h, 4 months and a half)	6-9 months
Starting Date/Ending Date	
Reimbursements (€) and benefits	800€/month, canteen lunch and transportation from Milano included