Some additional informations

This thesis will be hold in the framework of Ampere's activities concerning wide band gap materials.

I (Christophe Raynaud) will be the main supervisor (but not official one).

My scientific competences are in the area of semiconductor materials (Si and wide bandgap materials, electrical and optoelectrical characterizations of materials and devices).

Additionally to the subject developed in the main document :

A bibliographical study will be done before and during analyses on the following subjects: deep and shallow levels in Ga_2O_3 and GaN, LDLTS and its derivates technique (i-DLTS, CC-DLTS…). Depending on the circumstances, a study of these components before and after electronic and/or protonic irradiations can be performed.

The candidate can learn some more details about key words in the following references:

About DLTS:

N. Sghaier et al. Mater. Sci. Eng. C, 21 (2002) 283-286.
G. Zaremba et al. Mater. Sci. Eng. B, 177 (2012) 1323-1326.
L. Gelczuk et al. Solid-State Electronics 99 (2014) pp. 1-6.

About GaN:

H. Amano et al. *The 2018 GaN power electronics roadmap.* J. Phys. D: Appl. Phys. 51 (2018) 163001 (48pp).
A. Chini et al. (2009). *Evaluation of GaN HEMT degradation by means of pulsed IV, leakage and DLTS measurements*. Electronics Letters, 8(45), 426-427.
Y. Tokuda et al. (2006). *DLTS study of n-type GaN grown by MOCVD on GaN substrates.* Superlattices and Microstructures, 40(4-6), 268-273.

About Ga_2O_3:

S.J. Pearton et al. (2018). *A review of Ga2O3 materials, processing, and devices.* Applied Physics Reviews, 5(1), 011301.
M. Higashiwaki et al. (2016). *Temperature-dependent capacitance–voltage and current–voltage characteristics of Pt/Ga_2O_3 (001) Schottky barrier diodes fabricated on n–Ga_2O_3 drift layers grown by halide vapor phase epitaxy*. Applied Physics Letters, 108(13), 133503.

The two references given in the main document concerns a previous Chinese student financed by CSC.