



DPHE

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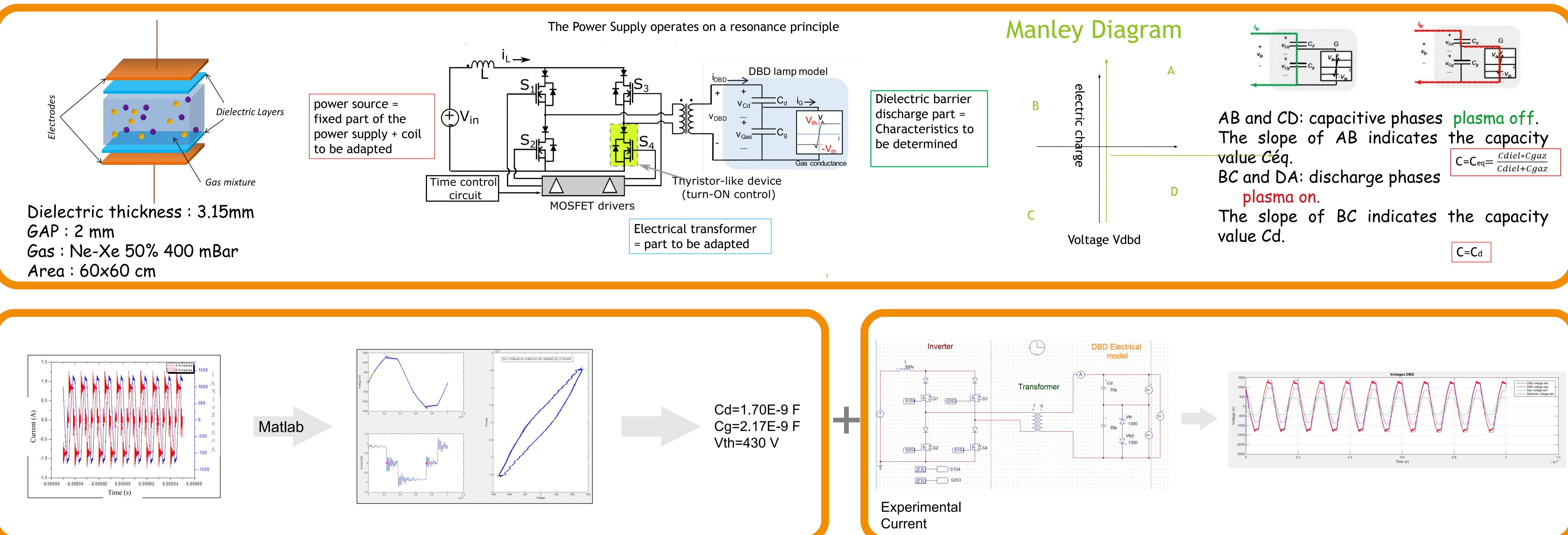
## Introduction

Dielectric Barrier Discharge (DBD) lamps have a lot of applications in industry and research (lighting, surface treatment, etc.), so the knowledge of their behavior and their parameters are essential. A DBD lamp is generally composed of 2 dielectric layers, separated by a gas mixture [1]. Plasma will appear in the gas when the  $v_{gas}$  voltage reaches the  $V_{th}$  threshold.

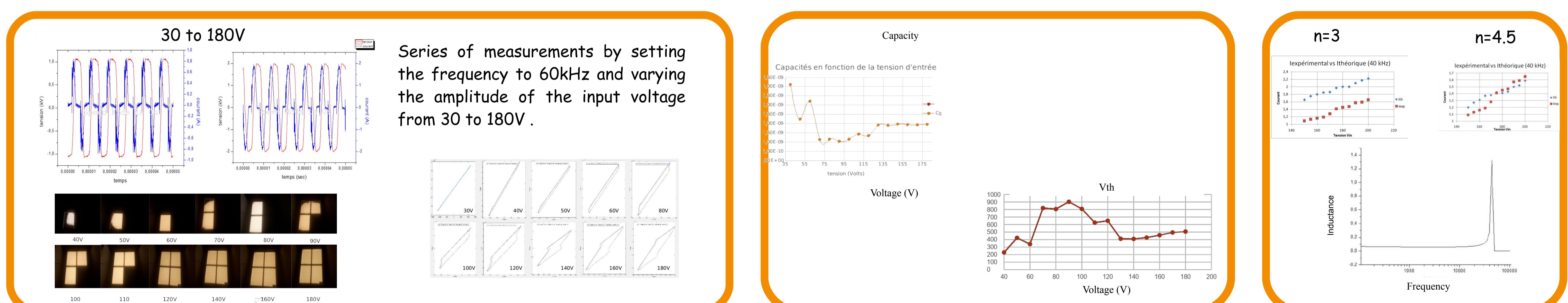
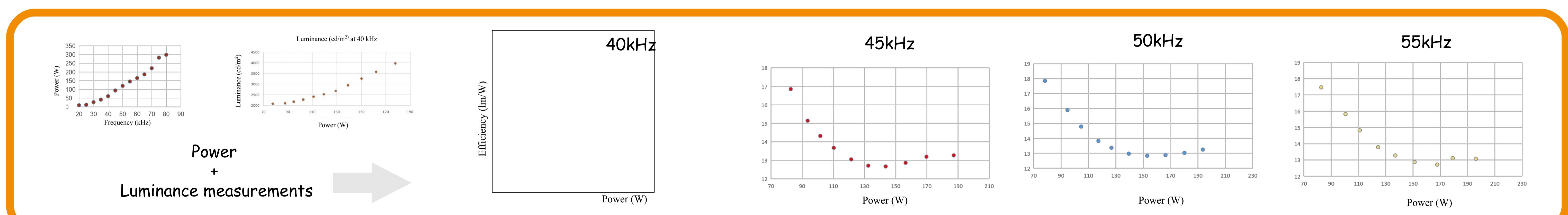
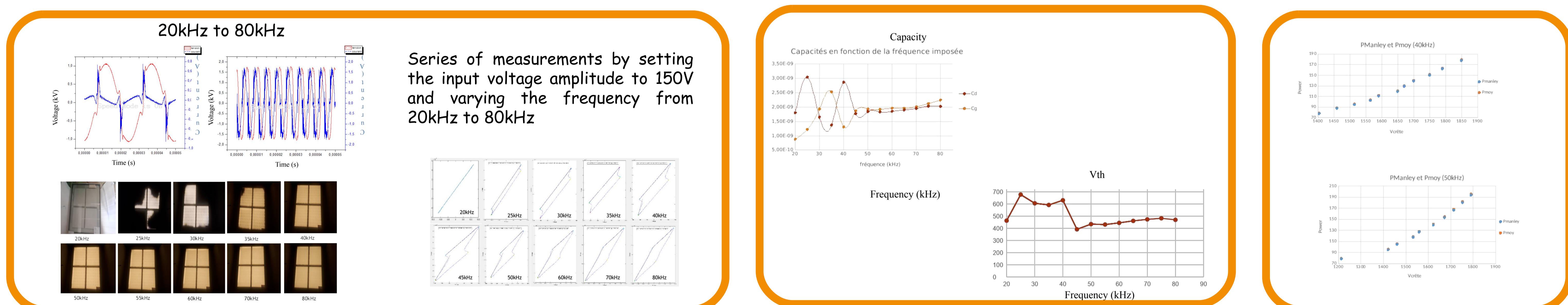


The purpose of this study is to analyze the interaction between a pulsed current power supply [2] and a flat DBD lamp.

## Material and methods



## Results and discussion



## Conclusion and perspectives

Theoretical formulas make it possible to determine in advance the voltage, current and power amplitudes.

Maximum efficiency of 18 lum/Watts achieved.

An additional optical study will have to be carried out by modifying the inductance value.

## References

- B. Caillier, T. Beaudette, L. Therese, P. Belenguer and P. Guillot. (2013), Études et optimisations de lampes planes sans mercure, European Journal of Electrical Engineering 16 565-582.; DOI:10.3166/ejee.16.565-582.
- David Magin Florez Rubio "Sources d'Alimentation Électrique pour l'Étude et l'Utilisation Efficace des Lampes Excimères DBD", Institut National Polytechnique de Toulouse - INPT, 2014. English, HAL-ID: (tel-00939234)