# Article information:

Real Time Power Control in a High Voltage Power Supply for Dielectric Barrier Discharge Reactors: Implementation Strategy and Load Thermal Analysis-所有数据库  
<https://www.webofscience.com/wos/alldb/full-record/WOS:000803223500001>

# Article summary:

1. This article discusses a low-cost power supply topology based on a push-pull converter for dielectric barrier discharge reactors.

2. The article presents an experimental analysis of the temperature and average power increase over time when the power supply is operated in open loop.

3. A control strategy is proposed to ensure constant average power operation of the device, which is shown to reduce the temperature increments significantly.

# Article rating:

May be slightly imbalanced: The article presents the information in a generally reliable way, but there are minor points of consideration that could be explored further or claims that are not fully backed by appropriate evidence. Some perspectives may also be omitted, and you are encouraged to use the research topics section to explore the topic further.

# Article analysis:

The article provides a detailed overview of a low-cost power supply topology based on a push-pull converter for dielectric barrier discharge reactors, as well as an experimental analysis of the temperature and average power increase over time when the power supply is operated in open loop. The authors then propose a control strategy to ensure constant average power operation of the device, which is shown to reduce the temperature increments significantly.

The article appears to be reliable and trustworthy overall, as it provides detailed information about its research methods and results, as well as references to relevant literature. Furthermore, it does not appear to contain any promotional content or partiality towards any particular point of view or technology. The authors also note potential risks associated with their proposed control strategy, such as possible damage due to excessive current or voltage levels.

However, there are some points that could be further explored in future research. For example, while the authors discuss how their proposed control strategy can reduce thermal stress on the reactor, they do not provide any evidence for this claim or explore other potential benefits that may arise from using this approach. Additionally, while they mention that their experiments were performed on two different reactor topologies (surface and volumetric), they do not provide any details about these configurations or how they may have impacted their results. Finally, while they present an empirical expression relating delivered power to output voltage from the power supply, it would be useful if they provided more information about how this expression was derived and what assumptions were made in its development.

# Topics for further research:

* Dielectric barrier discharge reactor
* Push-pull converter topology
* Constant average power operation
* Thermal stress reduction
* Surface and volumetric reactor configurations
* Empirical expression development

# Report location:

<https://www.fullpicture.app/item/fbbc363011c7fb11bf8ba31d49edae84>