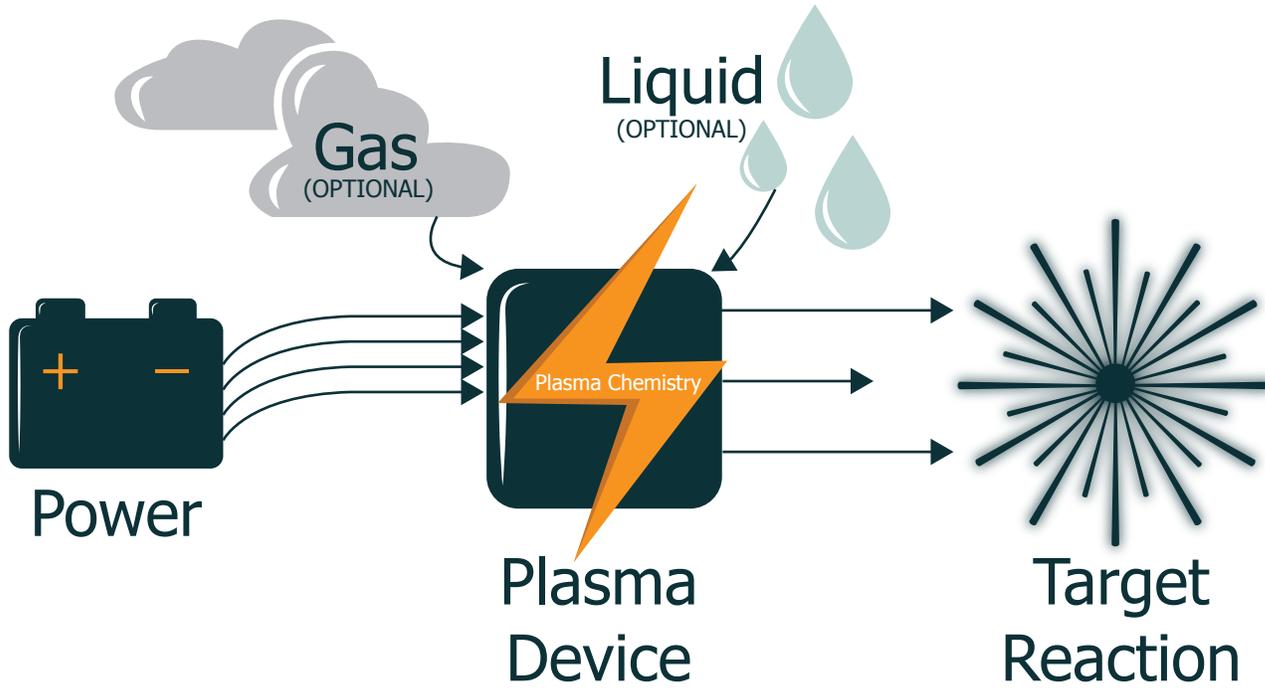


# Applied Non-Thermal Plasma Chemistry



- Air Sterilization
- Water Treatment
- Gaseous Processing
- Surface Treatment
- Catalytic Reactions



## Plasma Benefited Industries

### What is Plasma?

Plasma is the 4th state of matter and makes up 99% of all matter in the universe. Plasma occurs when a gas is saturated with energy and becomes ionized with high energy gas particles and creates active chemical species and radicals. These plasma generate radicals and ions behave like catalysts that promote or accelerate reaction pathways. Plasma is usually defined as thermal or non-thermal. Thermal plasma is in a state of equilibrium and occurs at high temperatures and therefore has limited uses. However, Non-Thermal Plasma (NTP) otherwise known as Non-Equilibrium Plasma can operate at room temperatures while also generating effective plasma chemistry.

### Why is it important?

Non-Thermal Plasma technology will be a key mechanism in improving global sustainability. Applied testing and scientific research of plasma technology has revealed increased process efficiency/effectiveness and potential economical advantages to conventional physical and chemical processes. Advanced Plasma Solutions (APS) is here to help during any phase of the design and development process. From research to prototyping to design for manufacturing, APS offers it all, a one-stop-shop for all things plasma engineering related. For a complete solution, APS also has an on-site Commercialization Center, AmpTech ([www.amptech.org](http://www.amptech.org)). The AmpTech Speed-to-Market program utilizes a collaborative environment to transform patented technologies into commercial products.

### “End Goal Driven Design”

Plasma can exist and be created in a wide range of temperature and pressure environments. Plasma relies on a multitude of variables thus providing near limitless options for Plasma Chemistry reactions. Once the “Target Reaction” is identified, Advanced Plasma Solutions (APS) creates custom plasma devices, determines any gas and/or liquids necessary, and delivers unique power supplies to meet the customer’s process goal requirements.



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