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Auto-Tuning Oscillator for the Generation of Nonthermal Plasma as a Therapeutic Treatment for Melanoma

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Nonthermal plasma is an emerging treatment method of Melanoma cancer cells with promising results. Implementation of nonthermal plasma for Melanoma cancer cell treatment is hindered by the need for precise setup and constant manual reconfiguration. This work presents a new automated approach for the generation of nonthermal plasma that can maintain a stable plume with no user intervention, while reducing form factor and cost. In contrast to expensive impedance matching plasma generators that operate at higher frequencies, this work employs a closed loop feedback algorithm, which utilizes AC amplitude and DC current measurements to adjust the frequency to produce a stable plume.

Author: THOMPSON, Kyle (University at Buffalo)

Co-authors: Dr ZIRNHELD, Jennifer (University at Buffalo); Dr BURKE, Kevin (University at Buffalo); Dr ZUCKER, Shoshanna (D'Youville College)

Presenter: THOMPSON, Kyle (University at Buffalo)

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