

VUV-based High-speed Electret Charging

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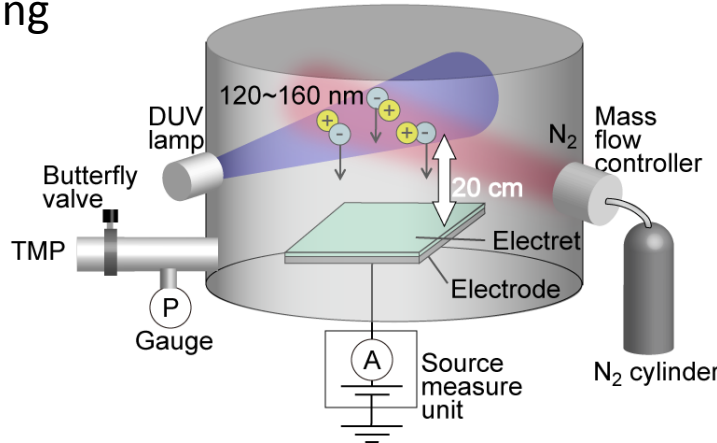
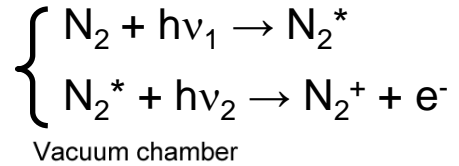
Keywords: Energy Harvesting, Electret, Vacuum UV, Photoionization

Introduction

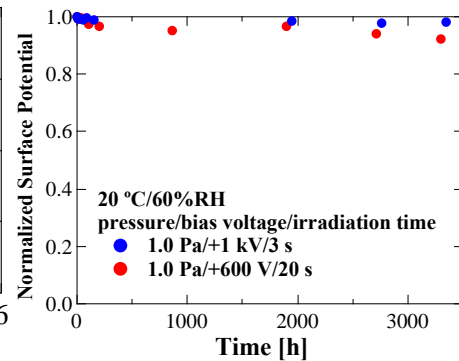
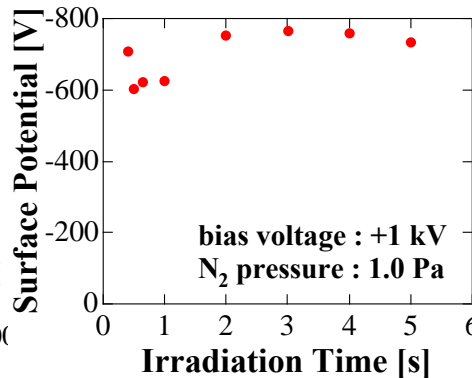
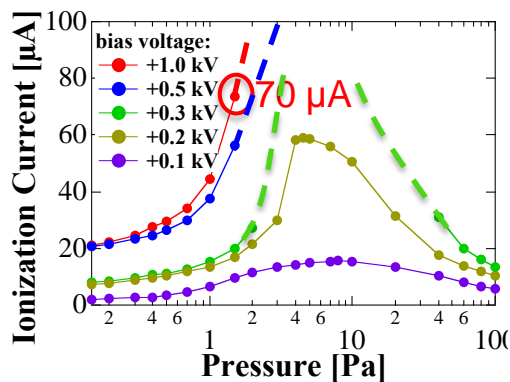
- Corona charging: difficult to optimize
- Soft X-ray charging: time consuming



New high-speed charging method using vacuum-UV-based multi-photon ionization



Charging Result



Summary

	Principle	Ionization Current	Charging time
Corona	discharge	2 μA	2 min
Soft X-ray	photoionization	0.1 μA	30 min
VUV	multi-photoionization	70 μA	2 s

References

- [1] M. Honzumi *et al.*, Proc. PowerMEMS 2010, Leuven, (2010), pp. 173-176.
- [2] M. Honzumi *et al.*, Appl. Phys. Lett., (2011), in press.