

Abstract Submitted
for the GEC12 Meeting of
The American Physical Society

Body tissue activation using micro-spot atmospheric pressure plasma source TAKUMI KISHIMOTO, Department of Biomedical Engineering, Tokyo City University, Tokyo, 158-8557, Japan, TAKAMICHI HIRATA, Department of Biomedical Engineering, Nano Carbon Bio Device Research Center, Tokyo City University, Tokyo, 158-8557, Japan, CHIHIRO TSUTSUI, Nano Carbon Bio Device Research Center, Tokyo City University, Tokyo, 158-8557, Japan, MASAHIRO AKIYA, AKIRA MORI, Department of Biomedical Engineering, Nano Carbon Bio Device Research Center, Tokyo City University, Tokyo, 158-8557, Japan — Experiments have been performed involving directly irradiating body tissues with atmospheric pressure plasma for various medical engineering applications of plasmas. Plasma irradiation was used to burn back dermis of rats. Then, healing and improvement of the scald areas were observed. Additionally, we devoted attention to the angiogenesis, which is a key component of the healing mechanism. Plasma irradiated rats and non treatment were performed an intravenous injection of fluorescein isothiocyanate (FITC) labelled tomato-lectin. The neo-vascular vessels were observed by a confocal laser scanning microscopy, and the quantities were calculated. Each quantity was the non treatment: 9.2 ± 0.77 and plasma irradiation: 18.4 ± 2.9 . These data indicates that direct plasma irradiation involving ion/radical may promote angiogenesis, and it promotes living-body activation.

Takumi Kishimoto
Department of Biomedical Engineering,
Tokyo City University, Tokyo, 158-8557, Japan

Date submitted: 15 Jun 2012

Electronic form version 1.4