

Colloquium on Green Nanomaterials

協力： 半導体応用研究センター

日時： 4月15日（火） 15:00~16:00

場所： 電子システム系院生研修室（ウェストウィング4階）

講師： **Prof. Annamaria Cucinotta**
University of Parma

題目： **Yellow Fiber Laser System for the treatment of ocular diseases**

概要： Nowadays, there is a great demand for coherent light sources emitting in the yellow spectral range due to their numerous applications. Direct generation of yellow emission can be attained using Dy³⁺-fiber lasers. The fiber laser technology offers the advantages of good beam quality, small footprint, and distributed thermal management. Current research focuses on enhancing their overall optical-to-optical efficiency and output beam quality. In the Yellow Flicker-project, a model of the Dy-doped fiber laser has been developed to maximize his efficiency. Additionally, a thermal model of the eye under laser irradiation has been developed to ensure safe and effective treatment protocols. In fact, the yellow laser is widely used to induce a biologic response in the retina without causing thermal damage to the target tissues to treat eye diseases like macular edema.

問合先： 藤原 康文（総合科学技術研究機構）



Colloquium on Green Nanomaterials

Cooperated by Ritsumeikan Semiconductor Application research center

Date: April 15 (Tue) 15:00~16:00

Place: Electronic Systems Graduate Student Training Room
@ 4th floor in West wing, Biwako-Kusatsu Campus

Speaker: Prof. Annamaria Cucinotta
University of Parma

Title: Yellow Fiber Laser System for the treatment of oCular
disEases



Abstract: Nowadays, there is a great demand for coherent light sources emitting in the yellow spectral range due to their numerous applications. Direct generation of yellow emission can be attained using Dy³⁺-fiber lasers. The fiber laser technology offers the advantages of good beam quality, small footprint, and distributed thermal management. Current research focuses on enhancing their overall optical-to-optical efficiency and output beam quality. In the Yellow Flicker-project, a model of the Dy-doped fiber laser has been developed to maximize his efficiency. Additionally, a thermal model of the eye under laser irradiation has been developed to ensure safe and effective treatment protocols. In fact, the yellow laser is widely used to induce a biologic response in the retina without causing thermal damage to the target tissues to treat eye diseases like macular edema.

Contact person : Prof. Yasufumi Fujiwara,
Research Organization of Science and Technology