

コヒーレント光科学セミナーのご案内 5月21日(月)

このたび、本学研究者交流支援により、インド工科大カラグプール校の Maruthi Manoj Brundavanam 氏を5月9日から6月6日まで本学にお招きすることになりました。

Brundavanam 氏はハイデラバード大学で学位取得後、本学ポスドク研究員を経て、現在インド工科大カラグプール校助教として活躍されています。

ついては下記の要領でセミナーを開催いたします。

Brundavanam 氏には非整数次の光渦生成についてお話し頂きます。

またこの機会に宇都宮大の Vinu R.V 氏にも講演をお願いしました。

Vinu R.V 氏はインド宇宙科学技術大学 (IIST) で学位取得後、宇都宮大学でポスドク研究員をされています。

セミナーでは偏光を活用したホログラフィーについてお話し頂きます。

研究室の研究員、学生の皆様もお誘い合わせのうえ、奮ってご参加下さい。

Coherent Optical Science Seminar on Information Optics

Date: Monday, 21 May 2018

Time: 15:00-16:45

Place: Room #803, East 6 Building, UEC

Program:

15:00-15:05

Welcome address

Yoko Miyamoto (Department of Engineering Science, UEC)

15:05-15:50

Speaker: Vinu R.V, Utsunomiya University

Title: Polarization holography for imaging applications

Abstract:

Electromagnetic wave propagation through anisotropic media unveils many interesting and significant phenomena based on the propagation direction and polarization state of the incident light. Polarization imaging is regarded as a very useful tool in signaling, imaging, non-destructive evaluation of inner structure, metrology etc. Therefore, the complete description of light demands the

inclusion of polarization, in addition to the amplitude and phase. The current talk focuses on the potential of polarization holographic techniques in imaging applications by giving emphasis on our newly developed Jones matrix microscopy system. The technique is capable to measure the spatially resolved Jones matrix elements in a single-shot intensity measurement. Our technique makes use of Fourier space sharing and this is possible by using a single coherent source, mirrors, lenses and beam splitters (without gratings). Also the potential features of a new approach called speckle field polarization holographic microscopy in improving the field of view and resolution compared to conventional holographic microscopy techniques is discussed. These polarization holographic microscopy techniques will have great impacts in the extraction of anisotropic features of static and dynamic samples and thereby have potential applications in studying the thermal response of liquid crystal samples, measurement of anisotropy, live cell imaging, etc.

15:50-16:00

Break

16:00-16:45

Speaker: Maruthi Manoj Brundavanam, Indian Institute of Technology Kharagpur

Title: Topological transformation of fractional optical vortex beams using computer generated holograms

Abstract:

In this talk I will be presenting some of the recent results on the generation of optical vortex beams with fractional topological charges using computer generated holograms. The topological transformations for different fractional topological charges will be discussed through the azimuthal momentum transformation and occurrence of critical points in the transverse momentum.

Contact: Yoko Miyamoto

(Department of Engineering Science, yoko.miyamoto@uec.ac.jp)

宮本洋子

〒 182-8585 (大口事業所等個別番号)

東京都調布市調布ヶ丘 1-5-1

電気通信大学大学院情報理工学研究科

電話 042-443-5283 (ダイヤル・イン)

E-mail yoko.miyamoto@uec.ac.jp