

Fri. 21 February, 2020 Digital Biocolor Society, Second Stage

(There is the statement on Second Stage in the end of this document)

6th Symposium of the 'Color' of Digital Imaging in Biomedicine

“Development and application of state measurement and analysis for autonomic nerves”

<< Call for general talk by poster, The invited talks are decided as below>>

Periods : 2019.11.18 - 2020.1.14 noon.

Deadline for proceeding submission: 2020.2.10 noon.

Proceeding: 2 to 10 pages (Language in proceeding and talk should be Japanese or English)

Special issue : Only the researches presented in the 6th Symposium of the 'Color' of Digital Imaging in Biomedicine are allowed to submit into AROB (Springer) Special Issue (under the schedule) on Digital Biocolor.

The submitted paper should be follow the policy of AROB.

Journal “Artificial Life and Robotics”

<http://isarob.org/journal/>

Submission: Please send the email with title, author's names, author's affiliations, e-mail address, abstract (more than 100 words) to Norimichi Tsumura < tsumura atmarks faculty.chiba-u.jp >

Committee of the Symposium: Norimichi Tsumura(Chiba University), Masahiro Nishibori (Next Generation Biomedical Research Center), Debu MUKHOPADHYAY (Saha Institute of Nuclear Physics), Toshihiko NUMAHARA (Numahara Hifuka), Keiichiro Kagawa (Shizuoka University), Munenori Fukunishi (Olympus Corp.), Kazuya Nakano(Chiba University), Hiroyuki Suzuki(Tokyo Institute of Technology), Hideaki Haneishi(Chiba University), Masahiro Yamaguchi(Tokyo Institute of Technology), Keiko Ogawa(Kanazawa University Hospital), Toshiya Nakaguchi (Chiba University), Hirokazu Doi (Kokushikan University), Norio Iijima(International University of Health and Welfare), Ken Naito (Waseda University)

(Schedule plan)

Fri. 21 February, 2020 Digital Biocolor Society

6th Symposium of the 'Color' of Digital Imaging in Biomedicine

“Development and application of state measurement and analysis for autonomic nerves”

Venue: Setagaya Campus in Kokushikan University

<https://www.kokushikan.ac.jp/access/setagaya/>

Keynote lecture and invited lectures: 34 Building 3rd Floor A310 room

General presentations (Poster), Reception: 34 A Building 10th Floor, Sky Lounge

Registration fee: 8000yen (3000yen for students)

Registration process: Please send the email with name, affiliation, e-mail address, to Norimichi Tsumura < tsumura atmark faculty.chiba-u.jp >

Organized by Digital Biocolor Society

Co-organized by Global Prominent Program in Chiba University, Japan

Co-sponsored by International Society of Artificial Life and Robotics

Co-sponsored by Group of Information Photonics, The Optical Society of Japan

Modulator: Norimichi Tsumura, Chiba University

@34 Building 3rd Floor A310 room

9:30 ~9:50 Opening remarks:

“The road to the 2nd Stage of the Bio-color Society and the importance of measuring and analyzing autonomic nerves”

Masahiro Nishibori, Next Generation Biomedical Research Center

9:50 ~10:30 Invited talk #1

“Study on prediction of biological state by image analysis of tongue”

Toshiya Nakaguchi, Chiba University

Break (5 mins)

10:35 ~11:15 Invited talk #2

“Kampo medicine and regulation of the autonomic nervous system”

Keiko Ochiai-Ogawa, Kanazawa University Hospital

Break (5 mins)

11:15 ~11:55 Invited talk #3

“Camera-based assistant technology for developmental disorders diagnosis based on autonomic nervous system activity measurement”

Hirokazu Doi, Kokushikan University and Norimichi Tsumura,
Chiba University

Lunch (11:55 - 12:55)

12:55 ~13:55 Keynote Lecture

“Complex systems and autonomic nerves”

Hiroshi Tanaka, Tokyo Medical and Dental University

13:55 ~14:35 Invited talk #4

“Brain substructures for autonomic nervous system regulation”

Norio Iijima, International University of Health and Welfare

14:35 ~15:15 Invited talk #5

“Onto-biology: for clarifying physical mechanism underlying living beings”

Ken Naito, Waseda University

Break (5 mins)

15:20 ~16:00 Invited talk #6

“Chaos scale and its application to heart rate data”

Hidetoshi Okutomi, Tokyo Institute of Technology

16:00 ~16:15. General presentation

16:15~ ~~General presentations (Poster) and Reception (at the same time)~~

@ 34 A Building 10th Floor, Sky Lounge

< Statement of Digital Biocolor Society: Second Stage >

Digital Biocolor Society is established in 1999, and the purpose of this Society is to promote the study of digitization, record and reproduction of the colors pertaining to living systems, to exchange related knowledge among its members and to recommit its profits to the public. The society provides the planning and negotiation of international and interdisciplinary collaboration for research, investigation and development from the two approaches: elemental technology and medical needs. In particular, the society play an important rule for research presentations and researchers communications for accurate color digitalization and record and reproduction for skin and facial images, endoscopic images for large intestine and liver, and microscopic image for tissue specimen. Specially, since multispectral imaging is blooming in those years, the researches in engineering field and medical field deeply discussed about the contribution of multispectral imaging into medical and biomedical fields. After these experiences, each researcher in digital biocolor society works actively in his own society.

Recently, the field of digital biocolor is expected to perform a great contribution on healthcare and medical applications because of the grow of computational resources and innovation of high-level signal processing method. For example, it can be introduced that non-contact vital sensing for heart rate, respiration rate and oxygen saturation are measured from color video camera. This techniques is the application of hemoglobin component extraction from skin color image into skin color video, which was presented in the community of digital biocolor society. The pulse wave which is key information to detect the vital information measured from the slight change of hemoglobin component in the video. Since this is the non-contact measurement, vital information can be measured very easily and the measured big data by large scale cohort experiment can be analyzed by artificial intelligence. This is expected to lead the innovation in the field of healthcare and medical applications. As other examples, it is expected to be strongly

developed that facial color and appearance reproduction and their diagnosis support techniques which are becoming important with development of legal system for telemedicine, endoscopic image processing using the special lights, digital dyeing for tissue specimen. However, since each researcher in these developing fields works only in his own society, it is not achieved that enough communications in digital biocolor society and sharing results of researches for the common good.

Therefore, as the second stage of digital biocolor society, the 6th Symposium of the 'Color' of Digital Imaging in Biomedicine will be organized. In this symposium, it is allowed to present researches that were already presented in another symposium, conference and so on, if the presentation meets the statement of digital biocolor to exchange related knowledge among its members and to recommit its profits to the public. The peripheral field is also welcome for the submission into the symposium.