15 February, 2018　Digital Biocolor Society, Second Stage

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

5th Symposium of the 'Color' of Digital Imaging in Biomedicine

"Renovation of Bio-imaging and its practical and clinical applications"

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

Periods　　: 2017.11.20　- 2018.1.15 noon.

Deadline for proceeding submission: 2018.2.5 noon.

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

Special issue　　: Only the researches presented in the 5th 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-maill 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(International University of Health and Welfare), Debu　MUKHOPADHYAY (Saha Institute of Nuclear Physics), Toshihiko NUMAHARA (Numahara Hifuka), Keiichiro Kagawa(Shizuoka University), Munenori Fukunishi(Chiba University), 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)

(Schedule plan)

15 February, 2018　Digital Biocolor Society

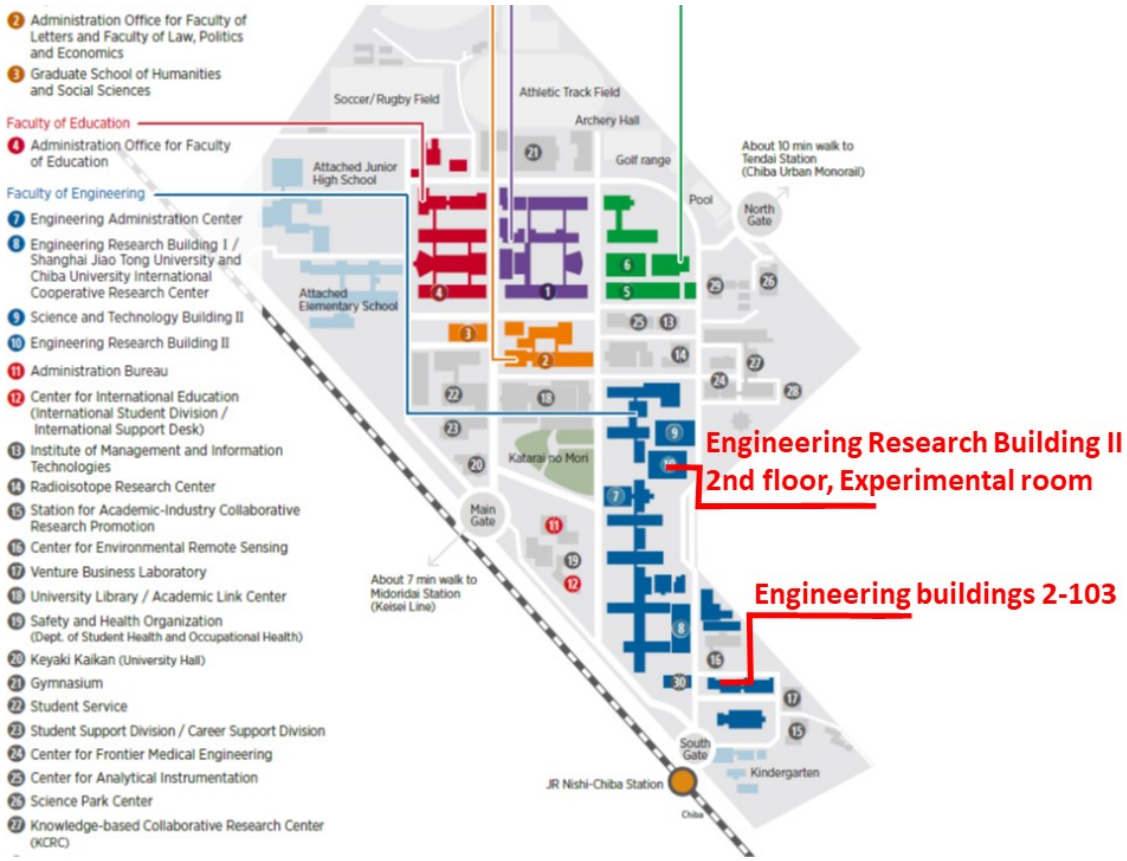
5th Symposium of the 'Color' of Digital Imaging in Biomedicine **"Renovation of Bio-imaging and its practical and clinical applications"**

Venue: Nishi-Chiba Campus in Chiba University

Keynote lecture and invited lectures: Engineering buildings 2-103

General presentations (Poster), Reception:

Engineering Research Building II 2nd floor, Experimental room



Registration fee: 5000yen (free for students)

Registration process: Please send the email with name, affiliation, e-maill 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

9:00 ~9:20 Opening remarks:
"The load to second stage of Digital Biocolor Society"
Masahiro Nishibori, International University of Health and Welfare

9:20 ~10:00 Invited talk #1(Tentative)
"Biomedical imaging based on time-resolving CMOS image sensors and compact compound-eye cameras"
Keiichiro Kagawa, Shizuoka University

10:00 ~10:40 Invited talk #2
"Non-Contact Video Based Estimation of Biomedical Information"
Munenori Fukunishi, Chiba University

Break (5 mins)

10:45 ~11:25 Invited talk #3
"Noncontact measurement of vascular compliance"
Kazuya Nakano, Chiba University

11:25 ~12:05 Invited talk #4
"Contactless finger vein authentication system using moving images"
Hiroyuki Suzuki, Tokyo Institute of Technology

Lunch

13:00 ~14:00 Keynote Lecture
"Bio Big Data and Precision Medicine"
Hiroshi Tanaka, Tokyo Medical and Dental University

14:00 ~14:40 Invited talk #5
"Measurement of tissue oxygen saturation of webbing of fingers"
Hideaki Haneishi, Chiba University

Break (5 mins)

14:45 ~15:25 Invited talk #6
"Feature measurement and color standardization
in digital pathology imaging"
Masahiro Yamaguchi, Tokyo Institute of Technology

15:25 ~16:05 Invited talk #7
"Non-Contact Biomedical Information and
Japanese Traditional(Kampo) Medicine"
Keiko Ogawa, Kanazawa University Hospital

16:10~ General presentations (Poster) and Reception **(at the same time)**

< 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 tele-medicine, 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 5th 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.