## Proceedings of CIF21

All the copyrights and responsibility on the contents of paper belong to the authors.

## **Preface**

Olaf Karthaus

- K-1 Environment and polymer materials: Considering the future after 100 years of continuous success (Plenary) André Laschewsky, and Alexander Böker
- K-2 Communicating in the connected world (Plenary)

Naoko Yanagihara

I-1 Versatile reactivity of metalloid-substituted  $\pi$ -Allylpalladium species (Invited)

Yoshikazu Horino

- I-2 Advanced coating for corrosion protection of substrate metals -Development of self healing coating- (Invited)
  M. Chiba, M. Kawamura, K. Suzuki, K. Hirasawa, Y. Tsuji, T. Hoshi, Y. Tomioka, H. Yanagimoto, A. Hyono, and H. Takahashi
- I-3 Toward the sustainable operation and management of micro-hydropower generation in a traditional community of Indonesia (Invited) 2022/1/11 received, 2022/3/3 uploaded

Jun'ichiro Ide, Tatsuro Sato, Ken'ichi Shinozuka, Asari Takada, Nariaki Onda, Izuki Endo, M. Alhaqurahman Isa, and Priana Sudjono

I-4 Surface modification of cellulose nanofiber using silane coupling agent for poly(methyl methacrylate) reinforcement (Invited) 2021/11/12 received, 2022/3/3 uploaded
Hiroyuki Kono

- O-1 Preparation and characterization of the sugar-immobilized nano-gel particles as a biometric material Lisa Connolly, Mitsuki Asano, Makoto Ogata, and Hiroyuki Kono
- O-2 Development of spherical/fiber mixed capsules for self-healing coating to improve corrosion protection of substrate metal Koshiro Suzuki, Yuki Tsuji, Atsushi Hyono, Makoto Chiba, and Hideaki Takahashi
- O-3 Proposal of automatically optical alignment method for photonic integration circuits using visible light-assisted image sensing technique 2021/11/26 received, 2022/3/3 uploaded
  Hongli Yu, Masaki Hasegawa, and Naoto Yoshimoto
- O-4 Characterization of hydrochloric acid hydrolyzed cellulose nanocrystal (CNC) / Chitosan composite film Kazuma Tsujioka, Yuji Hirai, and Masatsugu Shimomura
- P-1 Preparation and characterization of a novel chitosan-based hydrogel using sucrose as a cross-linking agent 2021/11/12 received, 2022/3/3 uploaded

  Junki Noda, and Hiroyuki Kono
- P-2 Examination of usefulness of plant growth by using depth camera

2022/1/13 received, 2022/3/3 uploaded Yuusuke Kita, and Hirooki Aoki

P-3 EEG measurement in pseudo haptics presentation using Leap Motion

2022/1/12 received, 2022/3/3 uploaded Houkan Abe, and Hiriioki Aoki

P-4 Development of experimental teaching tool for energy conversion to be used in high school physics classes

2022/1/18 received, 2022/3/3 uploaded Ryo Tanaka, and Makoto Hasegawa

P-5 Light amplification by anionic eosin dye doped in DNA composite films

2022/1/4 received, 2022/3/3 uploaded Takuma Kitano, and Yutaka Kawabe

- P-6 Anomalous absorption and fluorescence properties caused by assembling of the methyl salicylate diads-Miku Takahashi, Ken-ichi Sakai, Kohei Sambe, and Tomoyuki Akutagawa
- P-7 Formation of cracks on oxide film formed on aluminum alloy surface anodized during pore sealing treatment Koki Saito, Haruno Yanagimoto, Koshiro Suzuki, Kota Hirasawa, Mitsuki Kawamura, Atsushi Hyono, Makoto Chiba, and Hideaki Takahashi
- P-8 Self-healing electrodeposition coating formed on Al alloy surface applied for cold-region
  Rin Takada, Mitsuki Kawamura, Kota Hirasawa, Yuki Tsuji, Yumino Tomioka, Atsushi Hyono, Makoto Chiba, and Hideaki Takahashi
- P-9 Chirped pulse digital holography for capturing ultrafast optical pulse propagation in water Rika Sugo, Tomohiro Ishikawa, and Naoki Karasawa
- P-10 Crystal structures and fluorescence properties of ESIPT fluorophore with an atropoisomeric moiety Tamako Yamamoto, Ken-ichi Sakai, Kohei Sawabe, and Tomoyuki Akutagawa
- P-11 The effect of the deformation stress dispersion to the nanofilaments for strong adhesion in clingfish Kazuma Tsujioka, Yasutaka Matsuo, Yuji Hirai, and Masatsugu Shimomura
- P-12 Light emission properties of exciplex formed in polymer thin films Seiya Takabatake, and Yutaka Kawabe
- P-13 Elucidation and imitation of the structure of viscous spheres on the weft of a spider web aiming at sensor applications

2021/12/30 received, 2022/3/3 uploaded Taro Echizen, and Olaf Karthaus

P-14 Structure of cellulose microfibers on the lower side of *populus alba* leaves and their use in composite materials

2022/1/22 received, 2022/3/3 uploaded

Ryota Iida, Tatsuki Saito, Masayoshi Tabata, Thomas Berberich, and Olaf Karthaus

P-15 Proposal of class model for promoting self-regulated learning

2022/1/10 received, 2022/3/3 uploaded

Keisuke Maekawa, Hiromu Kasahara, Yasuomi Takano, Haruki Ueno, Hiroto Yamakawa, and Hiroshi Komatugawa

P-16	Pollen durability evaluation • analysis and applications 2022/1/5 received, 2022/3/3 uploaded Kazuhiro Dainaka, and Olaf Karthaus
P-17	Differences in vertebral bone quality and bone strength between sockeye salmon and kokanee salmon Hideyo Horiuchi, Syota Hironaka, Fumiya Nakamura, Chihiro Kawamoto, Yasutaka Matsuo, Hideyuki Mitomo, Kuniharu Ijiro, and Hiromi Kimura-Suda
P-18	Effects of osteoporosis medications on bone apatite and collagen fiber orientation in femurs of rats with chronic kidney disease Tomomi Masuya, Fumiya Nakamura, Yuya Kanehira, Masahiro Ohta, Tomohiro Shimizu, Masahiko Takahata, and Hiromi Kimura-Suda
P-19	Case study of collaborative learning model aim at improve colloquial language in student report 2022/1/6 received, 2022/3/3 uploaded Yumiko Yamashita, Sosuke Kawagoe, Hiroshi Komatsugawa, and Hiroto Yamakawa
P-20	Development of proton donor-acceptor type of flurochromic material Akino Sugawara, and Ken-ichi Sakai
P-21	A Proposal of flipped classroom under online education 2022/1/10 received, 2022/3/3 uploaded Hiromu Kasahara, Yasuomi Takano, Haruki Ueno, Hiroto Yamakawa, and Hiroshi Komatsugawa
P-22	Chemical modification of nanoporous silica surface for turning controlled drug-release property from dental/medical materials 2021/12/1 received, 2022/3/3 uploaded Kanako Nagamoto, Shigeaki Abe, Ko Nakanishi, Yuko Era, Fatima Farhana, Kenji Iwanuma, Mariko Nakamura, Teruo Kusaka, and Yoshimasa Kitagawa
P-23	Proposal of AI application for discriminating arteries and veins in ultrasound images by data augmentation using GAN 2022/1/10 received, 2022/3/3 uploaded Kotaro Inoue, Yoko Tsukamoto, and Hiroshi Komatsugawa
P-24	Versatile Japanese voice dialogue system using open technology and unique dialogue management mechanism 2022/1/9 received, 2022/3/3 uploaded Kazuki Suzuki, and Hiroshi Komatsugawa
P-25	Modeling of teacher's tacit knowledge-based evaluation for learner's competency using machine learning approach 2022/1/10 received, 2022/3/3 uploaded Koji Oketa, Mitsuru Kawazoe, and Hiroshi Komatsugawa
P-26	Mechanism of photo- and solvatochromism observed in the ESIPT fluorophore of 2,4- bisimidazolylphenol Naoya Miyamoto, Mayu Ogawa, Ken-ichi Sakai, Keiichi Kawano, and Tomoyuki Akutagawa
P-27	Silver deposition on polystyrene aligned particles on ITO glass substrates Ayumi Hanzawa, Mai Takase, Makoto Chiba, and Atsushi Hyono
P-28	Chiral separation formed in racemic mixture of oppositely helical rod-like polysilanes Yuuki Ishida, and Kento Okoshi
P-29	Synthesis of fluorescence-labeled bubblin: stomatal asymmetric cell division disruptor Keisuke Matsuda, Toshiro Imai, Kento Okoshi, and Tomoo Shimada