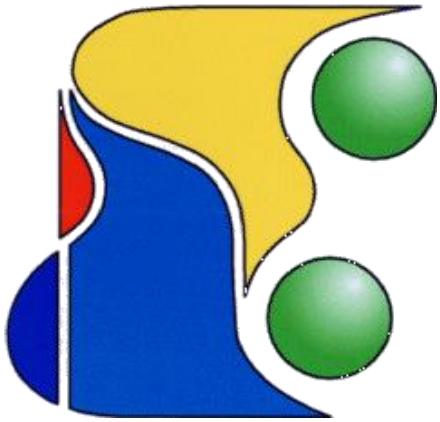
SPACC

先端錯体工学研究会

The Society of Pure and Applied Coordination Chemistry

News Letter

(August, 2016)



SPACC ニュースレター

（２０１６年８月号）

内容

The 23st International SPACC Symposium
– Functional complexes and their new applications –

The 1st International RINS Symposium

November 21 to November 23, 2016

Okayama, Japan

First Circular and Call for Papers

Organized by

The Society of Pure and Applied Coordination Chemistry

and

Okayama University of Science

SPACC
先端錯体工学研究会

SCIENCE DREAM GARDEN
わからないことには夢がある。
岡山理科大学
OKAYAMA UNIVERSITY OF SCIENCE

INVITATION

Dear Colleagues,

The 23st International SPACC (The Society of Pure and Applied Coordination Chemistry) Symposium will be held at Okayama University of Science, from November 21 to November 23, 2016. The International Advisory and Organizing Committee cordially invite you to attend the Symposium and participate in its scientific and social programs. The main theme of the Symposium will be "Functional complexes and their new applications." The Symposium will focus on the chemistry of novel and useful application of coordination chemistry that can open the novel area, afford novel materials, and find insight of the organic, inorganic, and biological system for the new sustainable feature.

As with previous SPACC Symposia, it is intended that this Symposium will provide a platform for young scientists to exchange scientific information among themselves and with the selected leading scientists. This challenging symposium began in Tokyo just 20 years ago by the SPACC fellow Prof. Yano, and has being held annually and consecutively in the world. It is our great pleasure to hold this 23st Symposium in Okayama.

Presentations will consist of three categories, several invited lectures, oral presentations, and poster presentations. Prizes will be awarded for the best presentations, especially for students. The International Advisory and Organizing Committee hope all registrants will present a paper, but acceptance of papers will be at the discretion of the Committee. The official language of the symposium will be English.

In the following pages, you will find details concerning the Symposium. We look forward to meeting you in the best season of Okayama, Japan!

Important Deadlines

Early-bird registration: **August 26**

Application of all presentations: **August 26**

Payment for registration fee (domestic participants only[*1]): **September 23**

Abstract submission: **September 23**

[*1] Only bank transfer will be available for early-bird payment. Participants from overseas must pay the fee at the symposium site by JPY.

ADVISORY AND ORGANIZING COMMITTEE

Honorary Chairperson:

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Toshihiko Ozawa	National Institute of Radiological Sciences
Toshifumi Satoh	Hokkaido University
Yutaka Amao	Osaka City University
Yuji Mikata	Nara Women's University
Hideki Hashimoto	Kwansei Gakuin University
Yuko Sugai	Kwansei Gakuin University
Misaki Nakai	Kansai University
Yuriko Matsumura	Tokyo Healthcare University
Keisuke Kawamoto	Kanazawa University
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CORRESPONDENCE

All correspondence concerning the Symposium should be addressed to:

Professor Haruo Akashi,
Research Institute of Natural Sciences,
Okayama University of Science
1-1 Ridai-cho,
Okayama 700-0005, Japan
Tel: +81-86-256-9721
E-mail: spacc23@rins.ous.ac.jp

SCIENTIFIC PROGRAM （Tentative)

The Scientific Program will include plenary lectures, invited lectures, oral and poster presentations. The official language of the Symposium is English. Registration, all lectures and the oral and poster presentations will be held at Okayama University of Science.

Monday, November 21

8:30----　　Registration
9:00----9:30　　Opening Remarks
Morning Session
9:30----12:00
12:00----13:00　　Lunch
Afternoon Session
13:00----17:20
17:20----17:30　　The rites of SPACC-awards
17:30----18:00　　SPACC-awards lecture
18:30----20:30　　Symposium dinner

Tuesday, November 22

Morning Session
9:30----13:00
13:00----14:00　　Lunch
Afternoon Session (Poster Session)
14:00----15:45
15:45----16:00　　Closing Ceremony & the rites for poster awards

Wednesday, November 23

9:00----12:00　　Laboratory Tour for Future Collaboration

REGISTRATION FORM

Registration should be made via email. Please use copy and paste the following form, complete it, and send the form via e-mail to Professor Haruo Akashi (spacc23@rins.ous.ac.jp)with “Registration SPACC23 + your name” as the subject.

The deadline for early-bird registration would be **August 26**, through Bank Transfer only from a bank account in Japan, by **September 23**. For participants from overseas, the registration fee should be paid at the symposium site by JPY, and no payment by credit card would be useful. However, the early-bird registration for participants from overseas should be made.

Registration form

Name:

Title:

Affiliation:

SPACC member (yes or no):

Student (yes or no):

Grade (if you are a student):

Banquet (yes or no):

E-mail:

Telephone number:

Name(s) of accompanying person:

To Pay by Bank Transfer (only from a bank account in Japan), please send your payment to:

Bank Name: Japan Post Bank (ゆうちょ 銀行)

Branch name: 019

Account name: The Society of Pure and Applied Coordination Chemistry (先端錯体工学研究会)

Account number: 0773549（当座)

Please input the registration “SPACC23” before your name.

Registration fee

Registration Type		Early-Bird Fee* (Deadline: July 31)	Regular Fee (at symposium site)
Member	General	¥ 15,000	¥ 20,000
	Student	¥ 5,000	¥ 7,000
Non-member	General	¥ 20,000	¥ 25,000
	Student	¥ 8,000	¥ 10,000

Banquet General ¥ 5,000 Student ¥ 3,000

The refund policy for cancellations is as follows:

- For cancellations received on or before September 30, 2016: Full refund
- For cancellations received on or after October 1 until October 31, 2016: 50% refund
- For cancellations received on or after November 1, 2016: no refunds.

APPLICATION FORM FOR PRESENTATIONS

Please use copy and paste the following form, complete it, and send the form via e-mail to Professor Haruo Akashi (spacc23@rins.ous.ac.jp) with "Presentation for SPACC23 + your name" as the subject, by **August 26**. The deadline for abstract submission would be **September 23**.

Presentation (oral/poster):

Title of the presentation:

Author's Name(s):

Affiliation(s):

Address:

Presenter:

Grade (if the presenter is a student):

Student Award (Lecture, Poster, or not apply):

E-mail:

Registrations will only be made via e-mail (spacc23@rins.ous.ac.jp).

ORAL PRESENTATIONS:

Abstracts should be prepared according to the Abstract Preparation Guidelines described below. From **July 25**, authors can download the abstract template from the website (http://spacc.gr.jp/). The abstract should be sent via e-mail (spacc23@rins.ous.ac.jp) to Professor Haruo Akashi with "Presentation for SPACC23 #submission ID" as the subject, and "#submission ID + name" as the file name. **The submission ID is a five-digit number.** Only Acrobat PDF files will be accepted. The deadline for abstract submission would be **September 23**. Authors will be informed within 3 weeks, if their contribution has been accepted for a poster presentation rather than an oral presentation. Standard facilities for PC presentations will be available at the Symposium site.

POSTER PRESENTATION:

Poster presentations will be very welcome as well. Authors should submit the same information (including an abstract) as listed for oral presentations above by the same deadlines. The poster presentation session will be held on afternoon, **November 22**, **Tuesday**. However all posters will be placed on the viewing boards from the Tuesday morning and will therefore be available for viewing during coffee breaks and lunch for the duration of the conference. A board (approximately 90 cm width, 160 cm height) will be available for posting each presentation.

ABSTRACT PREPARATION GUIDELINES

1. The abstract should be submitted in English, the official language of the symposium.

2. As the submitted abstract will be printed and reproduced directly without any editing, special care should be taken to ensure high quality of text and diagrams.

3. From **July 25**, authors can download the abstract template from the website (http://spacc.gr.jp/).

◎ 本会会員が主催するシンポジウム、セッション等

HU-NTU-CERMAV Joint Symposium on Functional Materials 2016

HU: Hokkaido University, Japan(北海道大学)

NTU: National Taiwan University, Taiwan（国立台湾大学）

CERMAV-CNRS: Centre de Recherches sur les Macromolécules Végétales, France

(フランス国立科学研究センター 植物高分子研究所)

日時：2016 年8 月5 日（金）9:00‐17:30

場所：北海道大学工学部　フロンティア応用科学研究棟セミナー室1

札幌市北区北１３条西８丁目

札幌地下鉄南北線、北12条駅、徒歩15 分

参加費：無料

プログラム：http://poly-bm.eng.hokudai.ac.jp/hncjs2016/index.html

Program Summary

Aug 5th, Friday, 2016
at Seminar Room 1, Frontier Research in Applied Sciences Building,
Faculty of Engineering, Hokkaido University

9:00—9:05 Opening Remarks Toshifumi SATOH (*Hokkaido University, Japan*)

9:05—9:35 **Invited Lecture**

IL01 **Functionalized Inorganic Nanoporous Materials for Biofuel Production from Lignocellulosic Biomass**

Kevin C.-W. WU (*National Taiwan University, Taiwan*)

9:35—9:50 **Invited Lecture**

IL02 **Lignin Depolymerization using Water/organic Biphasic Solvent**

Takuya YOSHIKAWA (*Hokkaido University, Japan*)

9:50—10:20 **Invited Lecture**

IL03 **Recovery of Phenolic Compounds from Biomass-derived Lignin**

Takao MASUDA (*Hokkaido University, Japan*)

10:20—10:35 **Coffee Break**

10:35—11:05 **Invited Lecture (Special Guest)**

IL04 **Synthesis and Electrochemical Properties of Hierarchically Porous $Zn(Co_{1-x}Mn_x)_2O_4$ Anode for Li-Ion Batteries via Cation Substitution Design**
Wei-Ren LIU (*Chung Yuan Christian University, Taiwan*)

11:05—11:35 **Invited Lecture**

IL05 **Unique Monolithic Porous Carbons with a Tunable Hierarchical Pore System of Micro-, Meso- and Macropores**
Shin MUKAI (*Hokkaido University, Japan*)

11:35—13:00 **Luncheon meeting**

13:00—13:30 **Invited Lecture**

IL06 **Functional Materials by Self-Assembly of Cyclic Polymers**
Takuya YAMAMOTO (*Hokkaido University, Japan*)

13:30—14:00 **Invited Lecture**

IL07 **Carbohydrate-based block copolymer self-assemblies: Highly nanostructured thin films and DSA patterning**
Redouane BORSALI
(*CERMAV-CNRS and Grenoble Alpes University, France*)

14:00—14:30 **Invited Lecture**

IL08 **Sub-10 nm Scale Microphase-Separated Structures in Hybrid Block Copolymers**
Toshifumi SATOH (*Hokkaido University, Japan*)

14:30—14:45 **Coffee Break**

14:45—16:15 **Special Lecture for Hokkaido Summer Institute**

IL09 **Organic Materials for Electrical memory Device Applications**
Wen-Chang CHEN (*National Taiwan University, Taiwan*)

16:15—16:30 **Coffee Break**

16:30—17:00 **Invited Lecture**

IL10 **Inkjet Printed Conductive Thin Film Patterns**
Ying-Chih LIAO (*National Taiwan University, Taiwan*)

17:00—17:30 **Invited Lecture**

IL11 **Facile Synthesis of Various Shaped SnO Particles in Organic Medium**

Mai Thanh NGUYEN and Tetsu YONEZAWA (*Hokkaido University, Japan*)

17:30— Closing Remarks Toshifumi SATOH (*Hokkaido University, Japan*)

HU-NTU-CERMAV Joint Symposium on Functional Materials 2016

HU: Hokkaido University, Japan
NTU: National Taiwan University, Taiwan
CERMAV: Centre de Recherches sur les Macromolécules Végétales-CNRS, France

Venue: Seminar Room 1, Frontier Research in Applied Sciences Building, Faculty of Engineering, Hokkaido University, Japan
Dates: Aug 5th, 2016

Schedule:
Aug 5th (Friday)

9:00- Opening Remark — Toshifumi SATOH (Hokkaido University, Japan)
9:05- Functionalized Inorganic Nanoporous Materials for Biofuel Production from Lignocellulosic Biomass — Kevin C.-W. WU (National Taiwan University, Taiwan)
9:35- Lignin Depolymerization using Water/organic Biphasic Solvent — Takuya YOSHIKAWA (Hokkaido University, Japan)
9:50- Recovery of Phenolic Compounds from Biomass-derived Lignin — Takao MASUDA (Hokkaido University, Japan)
10:35- Synthesis and Electrochemical Properties of Hierarchically Porous $Zn(Co_{1-x}Mn_x)_2O_4$ Anode for Li-Ion Batteries via Cation Substitution Design — Wei-Ren LIU (Chung Yuan Christian University, Taiwan)
11:05- Unique Monolithic Porous Carbons with a Tunable Hierarchical Pore System of Micro-, Meso- and Macropores — Shin MUKAI (Hokkaido University, Japan)

13:00- Functional Materials by Self-Assembly of Cyclic Polymers — Takuya YAMAMOTO (Hokkaido University, Japan)
13:30- Carbohydrate-based block copolymer self-assemblies: Highly nanostructured thin films and DSA patterning — Redouane BORSALI (CERMAV-CNRS and Grenoble Alpes University, France)
14:00- Sub-10 nm Scale Microphase-Separated Structures in Hybrid Block Copolymers — Toshifumi SATOH (Hokkaido University, Japan)
14:45- Organic Materials for Electrical memory Device — Wen-Chang CHEN (National Taiwan University, Taiwan)
17:00- Inkjet Printed Conductive Thin Film Patterns — Ying-Chih LIAO (National Taiwan University, Taiwan)
17:30- Facile Synthesis of Various Shaped SnO Particles in Organic Medium — Mai Thanh NGUYEN and Tetsu YONEZAWA (Hokkaido University, Japan)

Frontier Chemistry Center フロンティア化学教育研究センター
北海道大学 物質科学フロンティアを開拓する Ambitiousリーダー育成プログラム
高分子学会北海道支部

http://poly-bm.eng.hokudai.ac.jp/hncjs2016/index.html

Organizers: Toshifumi Satoh (Tel:011-706-6602), Wen-Chang Chen, and Redouane Borsali

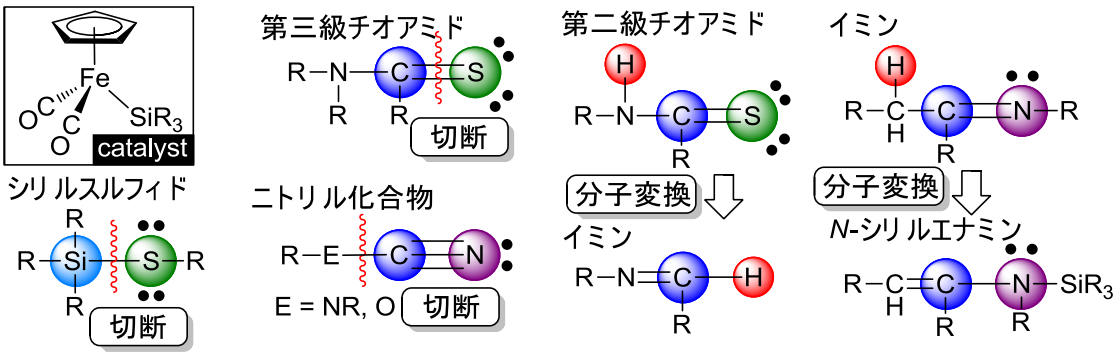
This seminar was supported by Faculty of Engineering, Graduate School of Chemical Sciences and Engineering, Frontier Chemistry Center (FCC), Ambitious Leader's Program (ALP) of Hokkaido University, and Hokkaido branch of the Society of Polymer Science, Japan.

◎研究紹介

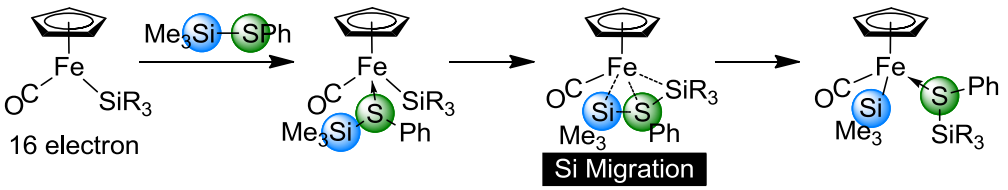
ケイ素転位反応を利用した不活性結合の活性化

琉球大学大学院教育学研究科
福本　晃造

不活性結合の活性化は、化合物の新規合成法開発や化合物そのものの新たな反応性解明という学術価値が高いだけでなく、物質循環社会を実現するための基礎技術という視点からも人間生活や産業に大きく貢献できる可能性を持っている。近年、我々は比較的合成容易なピアノイス型鉄錯体と様々な有機化合物との反応について調べてきた。C=S 二重結合を有する第三級チオアミド（$R_2NC(S)R$）とヒドロシラン（R_3SiH）共存下、触媒量の鉄錯体（$CpFe(CO)_2(CH_3)$）を含む溶液を 80℃加熱したところ、アミン（R_2NMe）の生成を確認した。これは C=S 二重結合が直接切断されたことを示している。同様の検討を窒素原子上に水素を導入した第二級チオアミド（$RHNC(S)R$）やβ水素を有するイミン（$RN=CR(CH_2R)$）に対して行ったところ、それぞれ対応するイミン（$RN=CHR$）および *N*-シリルエナミン（$R(R_3Si)N-CR=CHR$）を与えることが明らかとなった。このように同一の鉄錯体を用いる反応系であっても、炭素－ヘテロ原子間二重結合を含む分子のわずかな置換基の違いによって、様々な分子変換反応が進行することを見出している。



分子内に単結合や三重結合を有する化合物との反応も試みている。C≡N 三重結合を持つニトリル化合物との反応では、三重結合の直接切断は進行せず、隣接した単結合の位置選択的切断反応が進行することを報告した。最近ではケイ素－硫黄単結合を持つ化合物との反応も試みており、Si–S 単結合切断反応が進行することを明らかにした。これらの反応機構の解明では、いずれも鉄中心上のケイ素原子が電子飽和な原子へと転位する反応がカギとなって多彩な分子変換反応を提供していることを明らかにしている。現在もカギ反応を利用した新たな不活性結合活性化に取り組んでいる。



連絡先（e-mail）k-fuku@edu.u-ryukyu.ac.jp

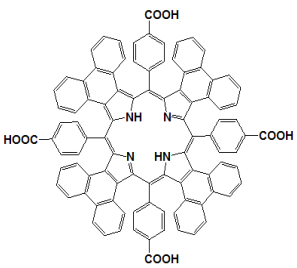
PDT 製剤を目指したπ拡張型ポルフィリンの合成と光特性評価

関西大学大学院

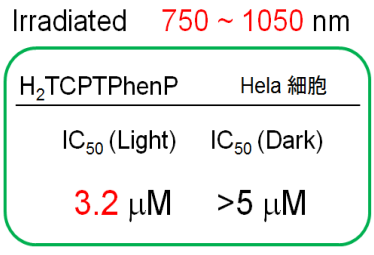
岩崎雄大・中井美早紀

効果的な光線力学療法 (Photodynamic Therapy, PDT)のために吸収極大が近赤外部にあるπ拡張型ポルフィリンに注目した。tetraphenyltetraphenanthroporphyrin (H_2TPTPhenP)の合成法を参考に phenyl 部分の *p* 位に carboxyl 基を導入した tetra(*p*-carboxyphenyl)TPhenP(H_2TCPTPhenP)と、その銅錯体(CuTCPTPhenP)を合成した。(Fig. 1.) これらのポルフィリン誘導体の DNA 光切断能はアガロースゲル電気泳動を用いて評価した結果、近赤外領域(750 nm ~ 1050 nm)の光照射下において H_2TCPTPhenP が DNA 切断能を示すことが判明した。以上のことから H_2TCPTPhenP は今後の PDT 治療において身体深部でも使用できる可能性を示唆するものとなった。

現在、がんの治療法として外科的処置や薬による治療などの治療法がありその中に光線力学療法 (Photodynamic Therapy:PDT)と呼ばれる方法がある。PDT は静脈注射により光増感剤を投与し患部に集積させた後に光照射を行うことで腫瘍細胞を攻撃、壊死させる方法である。PDT に用いられる光増感剤として、広く研究されている物質のひとつがポルフィリン誘導体である。PDT 製剤として Laserphyrin®や Forscan®などがあるが、これら製剤には光透過性の問題から身体深部に使用できないといった欠点がある。本研究では、この欠点を解決するために光透過性の良い波長域に吸収を持つπ拡張ポルフィリンの合成を行っている。既報にて報告されているπ拡張ポルフィリンの H_2TPTPhenP の合成法を参考に、*p* 位に carboxyl 基を導入した H_2TCPTPhenP と CuTCPTPhenP を合成した。UV-vis スペクトルより、DMF 中の H_2TCPTPhenP と CuTCPTPhenP の吸収極大は tetraphenylporphyrin (H_2TPP)に比べて 160 nm 程度レッドシフトしていることが判明した。これらのポルフィリン誘導体の DNA 光切断能評価はアガロースゲル電気泳動を用いて行った。全光(350 ~ 750 nm) 照射下では DNA 切断能は H_2TCPTPhenP > H_2TPP > CuTCPTPhenP の順に高かったのに対して、近赤外領域(750 nm ~ 1050 nm)の光照射下では H_2TCPTPhenP のみが DNA 切断能を示すことが判明した。さらに Hela 細胞を用いた細胞毒性評価では H_2TCPTPhenP は赤外光照射した際に細胞毒性をしめすことが判明した。



H_2TCPTPhenP



赤外光照射を行った時のみ
細胞毒性を示した。

連絡先：nakai@kansai-u.ac.jp

◎事務局からの連絡

- **SPACC ミニシンポジウム主催者を募集しております。**
  会員の活発な情報交換のため、ミニシンポジウムを開催していただける会員を募集しております。研究会からの助成がありますので事務局までご連絡ください。

- **SPACC 会員が主催・協賛する研究会・シンポジウムをお知らせください。**
  ニュースレター等を通して、会員の皆様に周知させていただきます。ニュースレター担当　中井(nakai@kansai-u.ac.jp)までお知らせください。

事務局連絡先

jimukyoku@spacc.gr.jp　担当　松村

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