

**Kyushu University Platform of Inter/Transdisciplinary Energy Research (Q-PIT)****<Poster Presentation >**<Date> 12:50-14:30, 28<sup>th</sup> January 2020<Venue> I<sup>2</sup>CNER Foyer, I<sup>2</sup>CNER Bldg. 1, Ito Campus, Kyushu University\* Award Ceremony 17 : 10 28<sup>th</sup> January 2020 at I<sup>2</sup>CNER Hall

&lt;Language&gt; English and Japanese

- Poster Presentation : Young Researchers, Doctoral Students/Kyushu University and Overseas students, Overseas researchers

【Kyushu University】

| No. of Poster | Affiliation                    | Name                            | Title of Research   |
|---------------|--------------------------------|---------------------------------|---|
| ①-1           | Faculty of Engineering         | 喜多 由拓                           | 滴状凝縮のマルチスケール観察とエネルギー輸送最適化の検討  |
| ①-2           | Graduate School of Engineering | 周 子涵                            | 配位子還元体を活性種とするポルフィセンコバルト錯体を用いた水素発生反応の開拓  |
| ①-3           | Graduate School of Engineering | Hwang Byungchan                 | Development of high durability silicone polymer electrolytes with Nafion-like structure for PEFC application                                |
| ①-4           | Graduate School of Engineering | Albert Mufundirwa               | Understanding the roles of different iron salts in the formation of oxygen reduction reaction (ORR) active sites in Fe-N-C electrocatalysts |
| ①-5           | Graduate School of Engineering | 内山 雄貴                           | 水蒸気によるCO酸化触媒反応の著しい促進効果  |
| ①-6           | Graduate School of Engineering | 星野 健太                           | 高濃度ドーパント導入による高プロトン伝導性燃料電池電解質の開発   |
| ①-7           | Graduate School of Engineering | 松川 祐子                           | 金属チオラートを介する硫化物ナノ粒子の作製   |
| ①-8           | Graduate School of Engineering | 宮川 一慶                           | トンネル効果に起因した液体水素から金属内部への水素侵入過程の解明  |
| ①-9           | Graduate School of Engineering | 山下 優                            | 植毛伝熱面の蒸発熱交換に及ぼす液位変化の影響  |
| ①-10          | Graduate School of Engineering | 江原 駿太                           | 光分解反応における律速過程と欠陥濃度の影響   |
| ①-11          | Graduate School of Engineering | 黒岩 誠                            | マグネシウム置換ガリウム酸ランタンの薄膜化が酸化物イオン伝導に及ぼす影響  |
| ①-12          | Graduate School of Engineering | MA Zhongliang                   | Constructing ultrastable carbon encapsulated nano-nickle to elucidate multistep reaction mechanism of MgH <sub>2</sub>                      |
| ①-13          | Graduate School of Engineering | 澁谷 光一郎                          | 複数風車のウエイク干渉に関する研究   |
| ①-14          | Graduate School of Engineering | 北林 康喜                           | 高濃度スキャンジウム置換ジルコン酸バリウムにおける会合エネルギーとプロトン濃度の関係  |
| ①-15          | Graduate School of Engineering | 村本 幸央                           | 複雑地形における風況予測に関する研究  |
| ①-16          | Graduate School of Engineering | Muhammad Irfan Maulana Kusdhany | High Surface Area MOF-derived Hierarchically Porous Carbon for Energy Storage Applications  |
| ①-17          | Graduate School of Engineering | 吉永 健                            | 再生可能エネルギーの有効利用を目的とした水電解・燃料電池ハイブリッド触媒の開発   |
| ①-18          | Graduate School of Engineering | TU HOAN PHUC                    | Development of paper-structured catalyst for hydrogen production by dry reforming of methane  |
| ①-19          | Graduate School of Engineering | 吉積 翼                            | SnO <sub>2</sub> ナノ粒子を担体に用いたPEFC電極触媒の研究   |
| ①-20          | Graduate School of Engineering | 牛島 怜                            | SOFCの緩和時間分布と各種依存性に関する研究   |

## Kyushu University Energy Week 2020

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|------|---|--------------------------|--|
| ①-21 | Graduate School of Engineering  | 森 滉稀                     | 固体酸化物形燃料電池の性能評価とシミュレーション手法   |
| ①-22 | Graduate School of Engineering  | 的場 太一                    | 再エネ有効利用を目的とした高耐久 PEFC のカソード触媒層設計—イオノマーの検討—   |
| ①-23 | Graduate School of Engineering  | 殿迫 徹也                    | 固体高分子型燃料電池用の Pt-酸化物ナノコンポジット電極触媒の開発   |
| ①-24 | Graduate School of Engineering  | 武井 翔太                    | 再エネ有効利用を目的とした PEFC の低 Pt 化に向けた研究<br>-濃度過電圧とカーボン担体の相関性の検討-  |
| ①-25 | Graduate School of Engineering  | 高田 正太郎                   | バイオガス直接内部改質 SOFC の改質反応に関する研究   |
| ①-26 | Graduate School of Engineering  | 黄 亨維                     | 再エネ利用を目的とした PEFC の高効率化に向けたメソポーラスカーボンファイバー電極の開発   |
| ①-27 | Faculty of Engineering  | Kayoung Park             | Improvement of cell performance in catalyst layers with optimal design for polymer electrolyte fuel cells          |
| ①-28 | Graduate School of Engineering  | 山下 翼                     | 機械学習を用いた固体酸化物燃料電池におけるカソードの開発方法の探索  |
| ①-29 | Graduate School of Engineering  | 大神 沙姫                    | ウインドソーラータワーによる太陽光と風力の同時取得発電  |
| ①-30 | Faculty of Engineering Center for Small Molecule Energy                         | 吉川 光寛                    | 太陽電池と燃料電池を融合した新電池の創成   |
| ①-31 | Graduate School of Integrated Frontier Sciences                                 | Suzuki Shoyo             | Fundamental Insights into Platinum-Free Electrocatalysts   |
| ①-32 | Graduate School of Integrated Frontier Sciences                                 | ZHU HUAN                 | Effect of rapid thermal annealing on fabricating pn-junction device by Si paste                                    |
| ①-33 | Graduate School of Integrated Frontier Sciences                                 | Enes Muhammet CAN        | Superhydrophobic Fluorinated Carbons for Water Management in PEFCs   |
| ①-34 | Graduate School of Integrated Frontier Sciences                                 | Selyanchyn Olena         | Nanocellulose Crosslinked with Sulfonic Acid as an Alternative Proton Conductive Membrane for Hydrogen Fuel Cells  |
| ①-35 | Graduate School of Science  | Suda Keiju               | Two dimensional crystallization of bacteriorhodopsin by depletion force of lipid                                   |
| ①-36 | Graduate School of Science  | 多伊良 夏樹                   | ストップフロー法および DFT 計算に基づくポリオキシメレート酸素発生触媒の機構的研究  |
| ①-37 | Graduate School of Science  | 脇山 史彬                    | 白金(II)単核錯体を触媒とした水素生成反応の活性制御因子の解明   |
| ①-38 | Interdisciplinary Graduate School of Engineering Sciences                       | 坂本 遼                     | 全固体塩化物シャトル電池の創製  |
| ①-39 | Interdisciplinary Graduate School of Engineering Sciences                       | Yousefian Ali            | Ion Density Analysis in a Miniature Neutralizer Utilizing PIC Simulation with Respect to Inlet Configuration       |
| ①-40 | *I <sup>2</sup> CNER, Interdisciplinary Graduate School of Engineering Sciences | TAHMID HASAN RUPAM       | Theoretical performance analysis of potential adsorbent/refrigerant pairs for next generation cooling applications |
| ①-41 | *I <sup>2</sup> CNER, Graduate School of Engineering                            | Zhang Nan                | Effect of addition of ammonia to hydrogen gas on hydrogen embrittlement in JIC test                                |
| ①-42 | *I <sup>2</sup> CNER, Graduate School of Engineering                            | 高崎 大裕                    | 大規模水素利用技術の安全性確保のための高温水素中のクリーブ損傷に関する研究  |
| ①-43 | *I <sup>2</sup> CNER, Graduate School of Engineering                            | 山田 和輝                    | O <sub>2</sub> および CO による水素助長疲労劣化進展の加速に対する抑制効果律速機構の違い  |
| ①-44 | *I <sup>2</sup> CNER, Interdisciplinary Graduate School of Engineering Sciences | M L Palash               | Functionalization of porous material for developing adsorption-based portable passive water harvester              |
| ①-45 | *I <sup>2</sup> CNER, Graduate School of Engineering                            | Tetsuya Miwa             | Oxygen evolution reaction on Au/Nickel-Iron layered double hydroxide nanosheet                                     |
| ①-46 | International Institute for Carbon-Neutral Energy Research                      | Qing Wang                | Oxygen-Deficient Silica Quartz: A New Material for Photocatalysis  |
| ①-47 | Interdisciplinary Graduate School of Engineering Sciences                       | David Carrillo-Canizalez | Power Output Enhancement of Diffuser Augmented Wind Turbines used in a multi rotor system                          |

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|-----|---|-------------------------------------|--|
| ②-1 | Graduate School of Engineering  | 徳永 大悟                               | 人体構造に準じたインテリジェントロボット義手の研究<br>- 表面筋電位による人型指ロボットの制御 -  |
| ②-2 | Graduate School of Engineering  | 澤野 賢太                               | SOFC の発電電力と排熱を用いたメタン発酵消化液濃縮システムの設計に向けた基礎研究   |
| ②-3 | *I <sup>2</sup> CNER, Graduate School of Engineering                            | Rocky Kaiser Ahmed                  | Synthesis of zeolite based consolidated composite adsorbents for the next generation cooling and heating systems |
| ②-4 | *I <sup>2</sup> CNER, Interdisciplinary Graduate School of Engineering Sciences | Sampad Ghosh                        | Toward Sustainable Energy Harvesting Using Hybrid Nanostructured Cement Composites                               |
| ②-5 | Interdisciplinary Graduate School of Engineering Sciences                       | 池谷 智陽子                              | 省エネ建築に資する自然換気・通風現象メカニズム解明に関する研究  |
| ②-6 | Interdisciplinary Graduate School of Engineering Sciences                       | Lyu Jiajun                          | Optimal planning and design of a hybrid renewable energy system for a residential region in Osaka, Japan         |
| ③-1 | Graduate School of Engineering  | Hwndrik Setiawan                    | Biochar-Metal Composite Biogas Impurities Adsorbent for Stable Energy Production in Solid Oxide Fuel Cell        |
| ③-2 | Faculty of Social and Cultural Studies  | 三島 達也                               | 分子生物学的手法(RNA-Seq)を用いたヒメオオクワガタ <i>Dorcus montivagus</i> 幼虫の腸内微生物におけるリグノセルロース分解酵素遺伝子の種類と発現量解析                      |
| ③-3 | Interdisciplinary Graduate School of Engineering Sciences                       | Colombatanrige Uthpala Amoda Perera | Cool, Green and Comfortable: A Sustainable Future for the HVAC&R Industry  |
| ③-4 | Interdisciplinary Graduate School of Engineering Sciences                       | UelunUjin Purev                     | Development of a prototype of insulated Ger for urban settlement area of Ulaanbaatar, Mongolia                   |
| ④-1 | Faculty of Engineering  | 津川 修一                               | Optimal redistributive policy under climate change: individual adaptation and social mitigation                  |
| ④-2 | Interdisciplinary Graduate School of Engineering Sciences                       | Ayas Mahr Abdelrahman Shaqour       | Urban Sustainable Development Index for comparative analysis of low emission policies in urban areas             |
| ⑤-1 | Graduate School of Engineering  | 古賀 大貴                               | 応力応答性光エネルギー変換材料を指向した機能性色素含有ポリマーの創生   |
| ⑤-2 | Graduate School of Engineering  | 澤山 和貴                               | シェールオイルの原位置燃焼による熱水貯留層の造成：<br>二酸化炭素地中貯留の可能性と経済性評価   |
| ⑤-3 | Graduate School of Information Science and Electrical Engineering               | Ahmed Nasser Ahmed Ahmed Ismail     | Energy and Spectrum Efficient Power Allocation in Downlink NOMA HetNets  |
| ⑤-4 | Graduate School of Information Science and Electrical Engineering               | 景山 知哉                               | 次世代無線通信における無線基地局の低消費電力化のための適応信号処理に関する研究  |
| ⑤-5 | Interdisciplinary Graduate School of Engineering Sciences                       | Yemanebirhan Tadesse Abirham        | Development of hybrid PV-T solar thermal pumping system  |
| ⑤-6 | Interdisciplinary Graduate School of Engineering Sciences                       | Chairunnisa                         | Development of Low Cost Activated carbon from Biomass for Dehumidification Application                           |
| ⑤-7 | Interdisciplinary Graduate School of Engineering Sciences                       | 竹下 隼人                               | 加速器駆動核変換システム高度化のための核種生成断面横測定   |

### [Overseas]

| No. of Poster | Affiliation  | Name                  | Title of Research  |
|---------------|--|-----------------------|--|
| G-1           | Jomo Kenyatta University of Agriculture and Technology | Milton Utwolo Alwanga | Regulatory Reforms and access to Electrification in Rural Kenya  |
| G-2           | Reiner Lemoine Institut gGmbH                          | Paul Bertheau         | Exploratory study of Japanese, Korean and Chinese development assistance to the Energy Sector of Southeast Asian countries |
| G-3           | University of Malaya                                   | Mahdi Tousizadeh      | EV adoption in Malaysia: Potential and Impacts Considering Large Scale Solar and Energy Storage                            |
| G-4           | University of Technology Sydney                        | Joseph Wyndham        | Stochastic modelling for risk assessment in electricity generation portfolios  |
| G-5           | Université Catholique de Louvain                       | Jian Wang             | High Yield Selective Synthesis of Na <sub>2</sub> B <sub>12</sub> H <sub>12</sub> with Autoclave Method                    |
| G-6           | The University of Sheffield                            | Peng Luo              | Comparison of 4H-SiC IGBT and CIGBT devices for Ultra-High Power Applications  |