

佐賀大学大学院工学系研究科  
環境・エネルギー科学グローバル教育プログラム  
博士後期課程（外国人留学生－在外）  
学生募集要項

**Guide for the Application for  
the Foreign Students of  
Post-graduate Program for Global Advancement (PPGA)  
in Environmental and Energy Science**

**(Doctor Course)**

**2019**

Application Deadline: June 7, 2019.

Academic Year Start: October 1, 2019.

Graduate School of Science and Engineering  
SAGA UNIVERSITY

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**Post-graduate Program for Global Advancement (PPGA)  
in Environmental and Energy Science**

**(Doctor Course)**

**2019**

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GUIDE FOR THE APPLICATION FOR  
THE FOREIGN STUDENTS OF  
POST-GRADUATE PROGRAM FOR GLOBAL ADVANCEMENT (PPGA)  
IN ENVIRONMENTAL AND ENERGY SCIENCE

The Post-graduate Program for Global Advancement (PPGA) in Environmental and Energy Science provides all lectures, seminars, and internships, etc. on sciences and technologies solving global environmental and energy problems in English for both foreign and Japanese students. Students from overseas can learn and study completely in Japan without a hurdle of Japanese language. The PPGA is an educational course in the Graduate School of Science and Engineering, Saga University, that started in October 2013, in order to bring up global researchers and engineers who will contribute to the environmental and energy science. This is a call for application to a three-year Doctor Course from the academic year of 2019.

Nowadays, science and engineering progress rapidly. We have received both benefits and negative influences from the science and engineering. Programs from the standpoint of environmental and energy conservation are necessary for developments of science and engineering that contribute to human prosperity. Educational study of the environmental and energy science should be performed from the all-round and global viewpoint. The PPGA has been established in the Graduate School of Science and Engineering in order to discuss and solve environmental and energy problems. The scope and goal of this PPGA is the education for students to possess an all-round insight for the environment and energy from the global point of view after their completion by acquiring knowledge and thinking power on various fields related to industrial manufacturing, construction, and biology, etc.

In the Doctor Course program of the PPGA, education and research guidance of the fields are given in the Graduate School of Science and Engineering: Chemistry and Applied Chemistry, Mechanical Engineering, Electrical and Electronic Engineering, Civil Engineering and Architecture, and Advanced Technology Fusion. Applicants are encouraged to decide the research fields and prospective relevant supervisor(s) appearing on the List of Academic Staffs, and contact with the supervisor(s).

Students who complete the Doctor Course program of the PPGA are granted the Doctor's Degree (Science, Engineering or Ph.D.). The month of entrance for foreign students is October, and they can enter the PPGA course immediately after completing their Master's Degree program without learning Japanese language.

## QUALIFICATIONS

1. **Applicants:** Non-Japanese citizens arriving from foreign countries to attend this program can apply.
2. **Academic career:** The following candidates may apply for admission.
  - a. Those who have received Master's Degree from Japanese University.
  - b. Those who have received Degree equivalent to Master's Degree of Japanese Universities in foreign country, or will receive it in foreign country as of September 30, 2019.
  - c. Those who have received a Degree equivalent to Master's Degree of Japanese Universities from a foreign school through correspondence education in Japan, or will receive the Degree as of September 30, 2019.
  - d. Those who have received a Degree equivalent to Master's Degree of Japanese Universities at educational institutions of the foreign country in Japan, which is designated by the Minister of Education, Culture, Sports, Science and Technology of the Japanese Government, or will receive the Degree as of September 30, 2019.
  - e. Those who have been designated by the Minister of Education, Culture, Sports, Science and Technology of the Japanese Government.
  - f. Those who are 24 years old or more as of September 30, 2019, and are admitted by the Graduate School of Saga University as that their academic abilities are equivalent to or higher than Master's Degree of Japanese Universities upon reviewing the submitted materials.

3. **Health:** Applicants should be in good health both mentally and physically.
4. **Language proficiency:** A good working level of English is required.
5. **Arrival in Japan:** Applicants should arrive in Japan by September 20, 2019, if admitted.

#### **Remarks**

- 1) Military personnel and civilian employees of the armed forces are not eligible.
- 2) Admission shall be canceled if the applicant fails to arrive in Japan by September 20, 2019.
- 3) Admission shall be canceled if the applicant fails to receive the Master's Degree on or before September 30, 2019.
- 4) If you are handicapped and hope the special care about the entrance examination or the study in Japan, please consult with the entrance examination office before the application.

#### **ENROLLMENT AND TUITION EXPENSES**

1. **Entrance examination fee:** 30,000 Yen.
2. **Entrance fee:** 282,000 Yen
3. **Tuition fee:** 267,900 Yen for each semester (scheduled). [535,800 Yen per academic year (scheduled)]. Amount of due might be slightly revised depending on the decision of the administration council.  
Payments must be done for each semester biannually within the beginning two months of the semester.  
For the information on the tuition assistance, exemption subsidization, and scholarships is available at the Benefits section in the following pages.
4. **Date of enrollment:** Date of enrollment is October 1, 2019.

#### **SELECTION AND ADMISSION**

1. Applicants who have excellent record will take an interview or an Internet interview by their desired Advisory Professor (Supervisor) after all-round judgment of submitted papers.
2. Applicants shall be examined by the Screening Committee of the PPGA. Only those who have a solid academic background, research capability and commitment will be selected as a successful candidate. Final result of the selection will be informed in the middle of July, 2019.
3. Six applicants will be selected as the candidates. Two applicants from Indonesia will be preferentially selected as the candidates among them.

#### **APPLICATION PROCEDURE**

1. Applicants should prepare the following documents to be forwarded to the Dean of the Graduate School of Science and Engineering, Saga University
  - ① **Application Form** (Form A).
  - ② **Field of Study and Study Program** (Form B). (This should be printed on both sides.)
  - ③ Official transcripts of **Bachelor's degree**, and **Master's degree** or certificate representing that the applicant will be conferred Master's degree by September 30, 2019. In the case that the applicant will be qualified by the criterion 2-e of **QUALIFICATIONS** described above, an official transcript of Bachelor's degree is required. The transcript or certificate must be sealed by the authority or sent directly from the university.
  - ④ Transcripts of **Academic Record** issued by the university authorities and its English translation. (The criteria of academic assessment should be also shown.)
  - ⑤ English summary of **Master Thesis** or it's equivalent if available, not exceeding four sheets of A4 size paper typed in double space. When a Master Thesis is not required by the University from which the applicant graduated, prepare a statement to that effect.
  - ⑥ Certificate of **Citizenship** issued by the appropriate authorities.
  - ⑦ **Recommendation and Reference**

- a. A letter of **Recommendation** (Form C) from the head (Dean, in case of University) of the applicant's affiliated institution.
- b. Letter(s) of **Reference** (Form D) from those who know the applicant's research/study capability addressed to the Dean of the Graduate School of Science and Engineering.

The letters of recommendation and reference(s) should indicate the English proficiency of the applicant. Enclose, therein, a certificate indicating the scores of TOEFL or a corresponding English Ability Test, if any.

- ⑧ **Three Photographs** (hatless portrait), 4.5 cm × 3.5 cm in size, taken within six months of application date. One copy should be attached to the application form. Two extra copies should be enclosed therein, with the applicant's name and the nationality on the reverse side of the copies.
  - ⑨ **Entrance Examination Fee:** 30,000 Yen. The entrance examination fee should be transferred as a postal money order at post office, or sent as a check (US dollar) to Entrance Examination Office of Saga University. Note that in the case of a check, if amount of exchanged Japanese yen was below 30,000 Yen, the check cannot be received by Entrance Examination Office of Saga University.
2. All documents should be sent by registered airmail, and must arrive at the Entrance Examination Office by **June 7, 2019**.

#### **Remarks**

- 1) The above documents should be typewritten in English on A4 size paper.
- 2) Incomplete documents are not acceptable.
- 3) Applicants are advised to choose their desired Advisory Professor (Supervisor), and to indicate the supervisor's name on the application form (Form A).
- 4) None of the documents submitted is returned to the applicant in any case.

#### **NOTES**

1. An applicant will be deprived of entrance under the following cases:
  - a. False statements on the documents.
  - b. Violation of the pledge.
2. Applicants are recommended to be well acquainted with the Japanese language, culture, customs, etc. A skill of the Japanese language is necessary in daily life.
3. Applicants are expected to complete their Doctor Course Program within three years.

#### **BENEFITS**

1. Exemption of tuition fee from complete to 50% may be granted depending on circumstances.
2. There are several scholarships for private-expense foreign students. Students can apply for these scholarships.
3. Housing: Students can apply to Saga University International House, or low-cost apartments supported by Saga prefecture and other organizations.

#### **CORRESPONDENCE**

The application form of the PPGA should be sent by air mail to the address shown below. Note that the application forms must not be submitted in any kinds of electronic form. Forms sent by facsimile and attached files on e-mail shall not be accepted in any occasion.

**Entrance Examination Office**  
**Saga University**  
**1 Honjo-machi**  
**Saga 840-8502, Japan**  
**Fax: (+81)-952-28-8944**  
**E-mail: ppga @mail.admin.saga-u.ac.jp**

佐賀大学大学院工学系研究科  
環境・エネルギー科学グローバル教育プログラム博士後期課程  
留学生募集要項

佐賀大学大学院工学系研究科環境・エネルギー科学グローバル教育プログラム（PPGA）は、外国人留学生と日本人学生が共学し、世界的な環境とエネルギー問題の解決に関する講義、セミナー、およびインターンシップ研修などの教育カリキュラムを全て英語で実施します。外国人留学生は、日本語の習得の障壁なく日本で充実した教育を受け研究を行い、一層の修業成果を上げることができます。PPGA は、環境・エネルギー科学に貢献するグローバルな研究者や技術者を育成するため、2013 年 10 月にスタートしました。ここに、2019 年度の博士後期課程（3 年間）の学生を募集します。

科学技術の進歩は著しいものです。私たちは、その進歩がもたらした恩恵と負の影響を受けています。人類の発展に貢献する科学技術の向上には、環境・エネルギー保全の観点からの取り組みが必要です。環境・エネルギー科学の教育研究は、総合的にしかも世界的な視野に立って取り組まなければなりません。PPGA は、環境・エネルギー問題を議論し解決するために工学系研究科に発足しました。修了後、工業生産、建設、バイオ等に関わる様々な工学系分野の知識と思考力を持ち、環境・エネルギーについて世界的な視野で総合的に洞察できる学生を育成することを目的としています。

PPGA 博士後期課程プログラムは、工学系研究科の化学、機械、電気電子、都市、先端融合の分野において教育と研究指導が行われます。志願者は、教員リストに記載されている指導教員のうちから、希望する研究分野を決定し、希望する指導教員を選んで、連絡をとることをお勧めします。

本コースの博士後期課程修了者には博士（理学、工学及び学術のいずれか）の学位が与えられます。なお、本申請による入学は 10 月であり、外国で大学院修了後直ちに日本語の教育を受けることなく入学することができます。

### 応募資格

1. 国籍：日本国籍を有しない者で、日本国外から留学する者
2. 学歴：下記のいずれかに該当する者
  - a. 日本の大学から修士の学位を授与された者
  - b. 外国において、修士の学位に相当する学位を授与された者又は 2019 年 9 月 30 日までに授与される見込みの者
  - c. 外国の学校が行う通信教育における授業科目を我が国において履修し修士の学位に相当する学位を授与された者又は 2019 年 9 月 30 日までに授与される見込みの者
  - d. 我が国において、外国の大学院の課程を有するものとして当該外国の学校教育制度において位置付けられた教育施設であって、文部科学大臣が別に指定するものの当該課程を修了し、修士の学位に相当する学位を授与された者又は 2019 年 9 月 30 日までに授与される見込みの者
  - e. 文部科学大臣の指定した者
  - f. 本学大学院において、個別の入学資格審査により、修士の学位を有する者と同等以上の学力があると認めた者で、2019 年 9 月 30 日において満 24 歳に達した者
3. 健康状態：心身ともに健全な者
4. 語学力：英語の能力が十分な者
5. 渡日：合格した場合、2019 年 9 月 20 日までに渡日可能な者

## 注

- 1) 現役軍人や軍属の資格の者は出願できません。
- 2) 2019年9月20日までに渡日をしなければ入学は取り消されます。
- 3) 修士の学位を取得見込みの者で、合格したものは、2019年9月30日までに学位を取得できなければ、入学を取り消します。
- 4) 障がい等を有する志願者で、受験上及び就学上の配慮を必要とする方は、出願前に入試課に相談してください。

## 入学と授業料

1. 検定料：30,000円
2. 入学料：282,000円
3. 授業料：267,900円／半期（予定）[535,800円／年（予定）]  
ただし、入学時及び在学中に学生納入金改定が行われた場合には、改定時から新たな納入金額が適用されます。  
支払いは各学期始めの2ヶ月以内に済まされなければなりません。授業料減額、奨学金などは次ページの援助の項を参照のこと。
4. 入学日は2019年10月1日です。

## 選考と入学許可

1. 志願者のうちで、提出された書類を審査し、総合的に判断して成績が優秀な者については、指導を希望する教員による面接又はインターネットインタビューが行われます。
2. 志願者は、PPGA選考委員会によって選考され、学業成績、研究能力が優秀であり、かつ出身大学等からの強い推薦がある者だけが合格者として選ばれます。最終結果は2019年7月中旬に本学より志願者へ通知します。
3. 定員は6名です。その内、2名はインドネシアからの留学生が優先的に合格者として選ばれます。

## 申請

1. 志願者は、本学大学院工学系研究科長に提出する下記の出願書類を準備して下さい。
  - ① 申請書(様式 A)
  - ② 研究分野と研究計画(様式 B)(両面印刷すること)
  - ③ 学士及び修士の学位記の写し(原本と相違ないことが証明されたもの)。現在学生の者は、2019年9月30日までに修士の学位を取得予定であるという証明書。応募資格 2.学歴の e に該当する志願者は学士の学位証明書を提出してください。
  - ④ 大学から出される成績証明書と、その英語訳(成績評価の基準がわかるものを提出すること)
  - ⑤ 修士論文の概要又は研究報告書など修士論文の概要と同等のもので、A4用紙4枚以内、英文のダブルスペースでタイプしたもの。志願者が修了した大学で修士論文が必要とされなかった場合は、その趣旨の申告書を提出してください。
  - ⑥ 本国の戸籍謄本又は市民権等の証明書
  - ⑦ 推薦書及び証明書
    - a. 申請者が属する機関の長の(大学においては研究科長)推薦書(様式 C)
    - b. 工学系研究科長あてに、志願者の研究/学力を知る者による証明書を提出してください。(様式 D)推薦書と証明書は志願者の英語能力が記されていないと認められればなりません。もしあ

れば、そこに TOEFL か英語能力試験に類似のものもののスコアを示す証明書を同封してください。

- ⑧ 4.5cm×3.5cm サイズで申請日前 6 か月以内に撮られた写真 3 枚（上半身，脱帽，正面向き）。そのうち 1 枚は申請書に添付されていなければなりません。他の 2 枚の写真は，その裏に申請者名と国名を記入し，出願書類に同封してください。

- ⑨ 入学検定料：30,000 円

納入方法としては，郵便局においてポスタルマネーオーダー（国際送金）で送金する又は銀行で送金小切手（US ドル）に替えて，それを出願書類と併せて送付するなどがあります。ただし，送金小切手の場合，本学が日本円に換金して 30,000 円に満たない場合は，出願書類を受理しませんので，不足が無いように注意してください。

2. すべての書類は書留の航空便で佐賀大学学務部入試課まで送付してください。2019 年 6 月 7 日必着とします。

### 注

- 1) 上記の書類は A4 用紙に英語でタイプしてください。
- 2) 不備書類は受付不可とします。
- 3) 志願者は，教員リストから希望する教員を選び，その教員名を申請書（様式 A）に必ず記入してください。
- 4) 提出された書類は志願者へは返却されません。

### 注意事項

1. 下記の場合には，合格者は入学許可を取り消されます。
  - a. 書類上の不正申告
  - b. 誓約書違反
2. 合格者は日本語，文化，習慣などをよく身につけるように勧められます。日々の生活に日本語の知識は必要です。
3. 合格者は 3 年以内に博士後期課程を修了することになっています。

### 援助

1. 状況により，授業料が半額免除される可能性があります。
2. 私費留学生は，各種奨学金に応募できます。
3. 住居：佐賀大学国際交流会館や佐賀県などの低価格な住居に応募できます。

### 問合せ先

PPGA の申請書等は，下記あてに航空便で送ってください。ファックスや E メール等での出願は受理できません。

〒840-8502

日本国佐賀県佐賀市本庄町 1 番地

佐賀大学学務部入試課

Fax:(+81)-952-28-8944

Email: ppga@mail.admin.saga-u.ac.jp

# ACADEMIC STAFFS FOR GRADUATE SCHOOL OF SCIENCE AND ENGINEERING [DOCTOR COURSE]

| Academic Staff  | Major Teaching and Research Field                   |
|---|---|
| <b>Course of Electronics and Information Systems</b>                  |   |
| <b>Chair of Electrical and Electronic Engineering</b>                 |   |
| <b>Electronics, Information and Communication</b>                     |   |
| Toyoda, I., Tanaka, T. and Nishiyama, E.                              | <i>Advanced Microwave Engineering</i>               |
| Itoh, H. and Fukumoto, H.   | <i>Advanced Computational Engineering</i>           |
| Guo, Q.   | <i>Advanced Optoelectronics</i>                     |
| Tanaka, T.  | <i>Photoelectronic Materials and Devices</i>        |
| Unsettled   | <i>Integrated Circuit Design</i>                    |
| Wakuya, H.  | <i>Bionic and Cybernetic Engineering</i>            |
| Hara, S.  | <i>Photovoltaic System</i>                          |
| Sasaki, S.  | <i>Advanced Electronics Packaging Technology</i>    |
| <b>Advanced Power Electronics</b>                                     |   |
| Kasu, M.  | <i>Power Electronic Devices and Materials</i>       |
| Oishi, T.   | <i>Microwave Electronic Devices and Circuits</i>    |
| Ohtsu, Y. and Ihara, S.   | <i>Plasma Energy Engineering</i>                    |
| Takahashi, K.   | <i>Surface and Interface Dynamics</i>               |
| Unsettled   | <i>Wide-band-gap Materials and Devices</i>          |
| <b>Course of Mechanical Engineering and Physical Science</b>          |   |
| <b>Chair of Mechanical Engineering</b>                                |   |
| <b>Thermo-Fluid Energy Engineering</b>                                |   |
| Miyara, A., Mitsutake, Y. and Kariya, K.                              | <i>Thermal Engineering, Heat and Mass Transfer</i>  |
| Kinoue, Y. and Shiomi, N.   | <i>Fluid Engineering</i>                            |
| <b>Material and Design Engineering</b>                                |   |
| Hagihara, S., Hattori, N., Tadano, Y.,<br>Taketomi, S. and Morita, S. | <i>Mechanics of Materials, Solid and Structures</i> |
| Zhang, B. and Hasegawa, H.  | <i>Design and Production Engineering</i>            |
| Tsujimura, T. and Izumi, K.   | <i>Advanced Robotics</i>                            |
| Sato, K.  | <i>Control Engineering, Robust Adaptive Control</i> |
| <b>Ocean Energy Engineering</b>                                       |   |
| Imai, Y.  | <i>Ocean Engineering</i>                            |
| Arima, H.   | <i>Thermal Engineering</i>                          |
| Ikegami, Y.   | <i>Thermal Energy Conversion Systems</i>            |
| <b>Course of Environmental Science and Engineering</b>                |   |
| <b>Chair of Chemistry and Applied Chemistry</b>                       |   |
| <b>Inorganic Materials Chemistry</b>                                  |   |
| Koikawa, M. and Yamada, Y.  | <i>Coordination Chemistry</i>                       |

### **Organic Materials Chemistry**

Unsettled  
Oishi, Y.  
Hanamoto, T., and Osada, S.  
Narita, T.

*Advanced Organic Chemistry*  
*Advanced Organic Materials*  
*Advanced Biological Materials*  
*Advanced Polymeric Materials*

### **Environmental Physical Chemistry**

Unsettled  
Era, M.  
  
Unno, M.  
Sakaguchi, K.  
Tominaga, M.

*Physical Chemistry of Amphiphilic Materials*  
*Physical Chemistry for Photonic and Optoelectronic Materials*  
*Biological Molecular Spectroscopy*  
*Physical Chemistry of functionalized materials*  
*Advanced Bioelectrochemistry*

### **Environmental Chemistry and Engineering**

Ohto, K. and Morisada, S.  
Takamuku, T.

*Environmental Chemical Engineering*  
*Functional Molecular Chemistry*

### **Chair of Civil Engineering and Architecture**

#### **Civil Engineering**

Chai, J. and Hino, T.  
Obiya, H.  
Ito, Y.

*Geotechnical Engineering*  
*Structural Engineering*  
*Construction Materials*

#### **Environmental System Engineering**

Ohgushi, K., Yamanishi, H., Oshikawa, H.  
and Narumol, V.  
Li, H. and Inohae, T.

*Water Environmental System*  
*Urban System and Environment*

#### **Architecture and Urban Design**

Mishima, N. and Goto, R., Kojima, S. and  
Nakaohkubo, K.

*Urban Design and Architecture*  
*Environmental Design for Architecture*

## ***Course of Advanced Technology Fusion***

### **Chair of Advanced Technology Fusion**

#### **Biomedical Engineering**

Goto, S. and Sugi, T.  
Matsuo, S., Hashimoto, T. and Sumi, T.  
Teramoto, K.  
Ueno, N.  
Md. T. I. Khan  
Muramatsu, K.  
Dozono, H.  
Unsettled  
Kimoto, A.  
Yamaoka, Y.

*Systems Control*  
*Fluid Engineering*  
*Sensing Systems*  
*Interface devices*  
*Biomedical Sensing*  
*Computational Electromagnetics*  
*Soft Computing*  
*Bioimaging*  
*Biosensors*  
*Biomedical Imaging*

### **Advanced Material Chemistry**

Akatsu, T. and Yada, M.  
Takeshita, M.  
Kawakita, H.

*Functional Ceramics*  
*Advanced Organic Materials*  
*Environmental Chemical Engineering*

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# MAJOR TEACHING AND RESEARCH FIELDS

## Graduate School of Science and Engineering [Doctor course]

### *Course of Electronics and Information Systems*

#### *Chair of Electrical and Electronic Engineering*

##### **Electronics, Information and Communication**

|  |  |
|--|--|
| <i>Advanced Microwave Engineering</i> .....            | Toyoda, I., Tanaka, T. and Nishiyama, E. |
| <i>Advanced Computational Engineering</i> .....        | Itoh, H and Fukumoto, H.                 |
| <i>Advanced Optoelectronics</i> .....                  | Guo, Q.                                  |
| <i>Photoelectronic Materials and Devices</i> .....     | Tanaka, T.                               |
| <i>Integrated Circuit Design</i> .....                 | Unsettled                                |
| <i>Bionic and Cybernetic Engineering</i> .....         | Wakuya, H.                               |
| <i>Photovoltaic System</i> .....                       | Hara, S.                                 |
| <i>Advanced Electronics Packaging Technology</i> ..... | Sasaki, S.                               |

##### **Advanced Power Electronics**

|  |                         |
|--|-------------------------|
| <i>Power Electronic Devices and Materials</i> .....    | Kasu, M.                |
| <i>Microwave Electronic Devices and Circuits</i> ..... | Oishi, T.               |
| <i>Plasma Energy Engineering</i> .....                 | Ohtsu, Y. and Ihara, S. |
| <i>Surface and Interface Dynamics</i> .....            | Takahashi, K.           |
| <i>Wide-band-gap Materials and Devices</i> .....       | Unsettled               |

### *Course of Mechanical Engineering and Physical Science*

#### *Chair of Mechanical Engineering*

##### **Thermo-Fluid Energy Engineering**

|   |  |
|---|--|
| <i>Thermal Engineering</i> .....  | Miyara, A., Mitsutake, Y. and Kariya, K. |
| Thermodynamics, energy conversion, power plant systems  |  |
| Heat exchanger, condensation, evaporation, absorption   |  |
| <i>Fluid Engineering</i> .....  | T., Kinoue, Y. and Shiomi, N.            |
| Turbomachinery, compressible fluid flow, effective utilization of fluid energy, multiphase flow |  |

##### **Material and Design Engineering**

|   |   |
|---|---|
| <i>Mechanics of Materials, Solid and Structures</i> ..... | Hagihara, S., Hattori, N.,<br>Tadano, Y., Taketomi, S. and Morita, S. |
| Strength of materials                                     |   |
| Advanced solid mechanics                                  |   |
| Computational mechanics                                   |   |
| Numerical analysis for structures                         |   |
| Fatigue strength of metals and advanced materials         |   |
| <i>Design and Production Engineering</i> .....            | Zhang, B., Hasegawa, H. and Mawatari, T.                              |
| Design of machinery and machine elements                  |   |
| Tribology of machine elements                             |   |
| Surface engineering                                       |   |

- Advanced Robotics* ..... Tsujimura, T. and Izumi, K.  
 Sustainable robot design  
 Networked robot control systems  
 Meta-heuristics for robots
- Control Engineering*..... Sato, K.  
 Control theory, robust control, adaptive control

### **Ocean Energy Engineering**

- Ocean Engineering* ..... Imai, Y.  
 Wave energy conversion system, Marine hydrodynamics, Floating system
- Thermal Engineering* ..... Arima, H.  
 Boiling heat transfer, two-phase flow, effective utilization of thermal energy
- Thermal Energy Conversion Systems* ..... Ikegami, Y.  
 Ocean thermal energy conversion plant, development of thermal energy conversion system

## ***Course of Environmental Science and Engineering***

### ***Chair of Chemistry and Applied Chemistry***

#### **Inorganic Materials Chemistry**

- Coordination Chemistry* ..... Koikawa, M. and Yamada, Y.  
 Education and studies on synthesis, structure, and physical properties of metal complexes  
 Structural aspects of metal complexes  
 Basic coordination chemistry

#### **Organic Materials Chemistry**

- Advanced Organic Chemistry*..... Unsettled  
 Transition metal-catalyzed organic synthesis  
 Chemistry of hypervalent iodine compounds
- Advanced Organic Materials* ..... Oishi, Y. and Narita, T.  
 Education and studies on syntheses, structures and properties of polymers and functional organic materials  
 Polymeric material sciences  
 Structure of organic thin films
- Advanced Biological Materials* ..... Hanamoto, T. and Osada, S.  
 Organic fluorine chemistry.  
 Synthesis and structure of biologically active peptides.  
 Chemistry of ion channel forming peptides.  
 Mechanism-based design and synthesis of enzyme or receptor inhibitors.

#### **Environmental Physical Chemistry**

- Physical Chemistry of Amphiphilic Materials* ..... Unsettled  
 Self-organization of Amphiphiles  
 Polymer - Amphiphile Interactions
- Physical Chemistry for Photonic and Optoelectronic Materials* ..... Era, M.  
 Optoelectronic materials  
 Advanced Solid State Chemical Physics
- Physical Chemistry for Biological Molecules* ..... Unno, M.  
 Molecular Spectroscopy  
 Biophysics of Photoreceptor Proteins

- Physical Chemistry of functionalized materials* .....Sakaguchi, K.  
 Functionalized carbon materials  
 Fabrication and evaluation of organic devices
- Physical Chemistry for bioelectrochemistry*.....Tominaga, M.  
 Bioelectrochemistry  
 Bio-fuel cell

**Environmental Chemistry and Engineering**

- Environmental Chemical Engineering*..... Ohto, K. and Morisada, S.  
 Advanced environmental chemistry
- Solution Chemistry*.....Takamuku, T.  
 Education and studies on structure and dynamics of liquids and solutions  
 Mixing state of binary solutions on nano-scale  
 Solvation structure of biomolecules in binary solutions  
 Physicochemical properties of room-temperature ionic liquids  
 Structure and dynamics of liquids confined in nano-space

**Chair of Civil Engineering and Architecture**

**Civil Engineering**

- Geotechnical Engineering* ..... Chai, J.,Hino, T.  
 Theory and practice of geotechnical engineering prediction and prevention of ground disaster  
 Advanced geotechnical engineering  
 Advanced geo-environmental engineering  
 Geomechanics and rock engineering  
 Advanced soil mechanics
- Structural Engineering* ..... Obiya, H.  
 Advanced earthquake engineering  
 Theory of basic and application of large scale structure systems  
 Advanced structural analysis  
 System analysis of structures  
 Advanced structural design  
 Advanced computational mechanics
- Construction Materials* .....Ito, Y.  
 Improvement of mechanical properties of construction materials  
 Utilization of waste materials  
 Advanced concrete engineering  
 Maintenance management of concrete structures  
 Development of inspection technique for concrete structure  
 Advanced geotechnical materials  
 Geotechnical materials engineering

**Environmental System Engineering**

- Water Management System*.....Ohgushi, K., Yamanishi, H. and Narumol, V. and Oshikawa, H.  
 Water resources engineering  
 Wastewater treatment systems  
 Computational hydraulics and remote sensing engineering for water environment  
 Water resources management  
 Water environmental systems engineering  
 Environmental systems engineering

Water pollution control systems  
Advanced hydraulic network system planning  
Planning theory on water environment

*Urban System and Environment* ..... Li, H., and Inohae, T.  
Basic principle and application of urban planning and transportation planning  
Advanced urban space design  
Advanced transportation planning  
Advanced environmental evaluation

### **Architecture and Urban Design**

*Urban Design and Architecture* ..... Mishima, N., and Goto, R.,  
Basic principle and application of urban planning and transportation planning  
Advanced urban space design  
Advanced transportation planning  
Advanced environmental evaluation

*Environmental Design for Architecture* ..... Kojima, S. and Nakaohkubo, K.  
Town space design  
Advanced Architectural environmental control  
Urban and Building Environment

## ***Course of Advanced Technology Fusion***

### ***Chair of Advanced Technology Fusion***

#### **Biomedical Engineering**

*Intelligent Control Engineering*..... Goto, S. and Sugi, T.  
Compensation of hand movement by additional force  
Power system control; Reliability analysis of equipments in power stations,  
Modeling and analysis of geothermal power station  
Plant system control; Modeling and control of Ocean/Spring Thermal Energy  
Conversion(OTEC/STEC), Modeling and control of chemical plant  
Mechatronic system control; Simulator for articulated robot arm,  
Cooperative control of plural robots, Forcefree control

*Bioimaging and Sensing*..... Kimoto, A. and Yamaoka, Y.  
Bioimaging; Wearable functional near-infrared spectroscopy system  
Bioimaging; Ultra-high spatial resolution bioimaging of cells  
Bioimaging; Oxygen bioimaging in cell using genetic biosensors  
Biosensors; Intelligent-composite multisensors  
Biosensors; Tactile sensors mimicking human perceptions  
Biosensors; Non-invasive imaging with composite sensors  
Biomedical imaging; Photoacoustic imaging

*Applied Computing*..... Muramatsu, K. and Dozono, H  
Numerical analysis of electromagnetic field  
Optimal design of electromagnetic apparatus  
Modelling of magnetic materials  
Soft computing  
Self-organizing maps

*Fluid Engineering*..... Matsuo, S., Hashimoto, T. and Sumi, T.  
Compressible fluid flow, effective utilization of fluid energy, multiphase flow

*Sensing Systems*..... Teramoto, K.  
Non-destructive testing.

Inverse problems in multidimensional sensing.  
Wave-field analysis  
Biomedical sensing by ultrasound  
Photonic Sensing.  
Nano-scale Sensing.  
Signal processing

*Interface Devices*.....Ueno, N.

Mechanoluminescences Sensor  
Dynamic Imaging Analysis  
Human Interface

*Biomedical Sensing*..... Md. T. I. Khan

Sensing systems of biomedical engineering dynamics

### **Advanced Material Chemistry**

*Functional Ceramics* ..... Akatsu, T. and Yada, M.

Education and studies on structural and functional ceramics  
Advanced inorganic materials  
Preparation of ceramics: solid state reaction, sol-gel process, reactive infiltration  
Eco-friendly ceramics: luminescence materials for energy-saving, ceramic recycle  
and porous ceramics for environmental cleanup  
Nano-size functional ceramics: nano-fiber, nano-tube, nano-composites  
Ceramic composite

*Advanced Organic Materials* ..... Takeshita, M.

Advanced supramolecular chemistry  
Molecular design of advanced materials

*Environmental Chemical Engineering* ..... Kawakita, H.

Separation and removal material preparation of metals  
Modified saccharides and polysaccharides synthesis using enzymatic reaction

**POST-GRADUATE PROGRAM FOR GLOBAL ADVANCEMENT (PPGA)  
IN ENVIRONMENTAL AND ENERGY SCIENCE**

**GRADUATE SCHOOL OF SCIENCE AND ENGINEERING,  
SAGA UNIVERSITY**

**A P P L I C A T I O N   F O R M**

**INSTRUCTIONS (記入上の注意)**

1. Application should be typewritten or written in Roman block capitals.  
(記入は楷書又は大文字のローマ字体を用いること。)
2. Numbers should be written in Arabic figures.  
(数字は算用数字を用いること。)
3. Year should be written in the Anno Domini system.  
(年号はすべて西暦とすること。)
4. Proper nouns should be written in full and not be abbreviated.  
(固有名詞はすべて正式な名称とし、一切省略しないこと。)
5. An examination fee of 30,000 yen should be enclosed.  
(検定料 30,000 円を添えること。)
6. Write your name and the address within the box below for notifying the result of the selection. This box will be used for the addressing stickers.  
(合格通知書等を送付するので氏名と住所を下記欄に記入のこと。  
この欄は住所ラベルとして使用する。)

Name :

Present  
Address :

Tel/Fax :

POST-GRADUATE PROGRAM FOR GLOBAL ADVANCEMENT (PPGA)  
IN ENVIRONMENTAL AND ENERGY SCIENCE  
GRADUATE SCHOOL OF SCIENCE AND ENGINEERING, SAGA UNIVERSITY  
(DOCTOR COURSE)

2019年度佐賀大学大学院工学系研究科環境・エネルギー科学グローバル教育プログラム(博士後期課程)入学志願票

Course

- Electronics and Information Systems
- Mechanical Engineering and Physical Science
- Environmental Science and Engineering
- Advanced Technology Fusion

Chair and Research Field

Chair : \_\_\_\_\_

Research Field : \_\_\_\_\_

Name of the desired supervisor (指導を希望する主指導教員名をかみならず記入すること。)

\_\_\_\_\_

Paste a passport sized photograph or digital image taken within the past 6 months. Write your name and nationality in block letters on the back of the photo.  
(4.5 cm × 3.5 cm photo)  
(写真 (4.5 cm × 3.5 cm) )

1. Name in full, in native language (姓名(自国語))

\_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_  
(Family name) (First name) (Middle name)

In Roman block capitals (ローマ字)

(Sex)  
 Male (男)  
 Female (女)

\_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_  
(Family name) (First name) (Middle name)

(Marital Status)  
 Single (未婚)  
 Married (既婚)

2. Nationality (国籍)

\_\_\_\_\_

3. Date of birth (生年月日) Year 19 \_\_\_\_\_, Month \_\_\_\_\_, Date \_\_\_\_\_, Age \_\_\_\_\_ (As of April 1st, 2019)  
(年) (月) (日) (年齢)

4. Present status; with the name of the university attended, or of the employer (現職(在学大学名又は勤務先名まで記入すること))

\_\_\_\_\_

5. Present address and telephone number, facsimile number or E-mail address (現住所及び電話, ファックス番号, E-mail アドレス)

Present address (現住所) : \_\_\_\_\_

電話番号/FAX 番号(Telephone/facsimile number) : \_\_\_\_\_

E-mail address : \_\_\_\_\_

6. Permanent address (本籍): \_\_\_\_\_

7. Field of specialization studied in the past (Be as detailed and specific as possible.)

(過去に専攻した専門分野(できるだけ具体的に詳細に書くこと。))

\_\_\_\_\_

8. Educational background (学歴)

|  | Name and Address of School<br>(学校名及び所在地) | Year and Month of Entrance and Completion<br>(入学及び卒業年月) | Amount of time spent at the school attended<br>(修学年数) | Diploma or Degree awarded, Major subject<br>(学位・資格, 専攻科目)<br>When taking leave of absence, the period and reason.<br>(休学した場合はその期間・理由) |
|--|--|---|---|---|
| Elementary Education<br>(初等教育)   | Name<br>(学校名)                            | From<br>(入学)  | years<br>(年)  |   |
| Elementary School<br>(小学校)   | Location<br>(所在地)                        | To<br>(卒業)  | and<br>months<br>(月)                                  |   |
| Secondary Education<br>(中等教育)  | Name<br>(学校名)                            | From<br>(入学)  | years<br>(年)  |   |
| Lower Secondary School<br>(中学)   | Location<br>(所在地)                        | To<br>(卒業)  | and<br>months<br>(月)                                  |   |
| Upper Secondary School<br>(高校)   | Name<br>(学校名)                            | From<br>(入学)  | years<br>(年)  |   |
|  | Location<br>(所在地)                        | To<br>(卒業)  | and<br>months<br>(月)                                  |   |
| Higher Education<br>(高等教育)   | Name<br>(学校名)                            | From<br>(入学)  | years<br>(年)  |   |
| Undergraduate Level<br>(大学)  | Location<br>(所在地)                        | To<br>(卒業)  | and<br>months<br>(月)                                  |   |
| Graduate Level<br>(大学院)  | Name<br>(学校名)                            | From<br>(入学)  | years<br>(年)  |   |
|  | Location<br>(所在地)                        | To<br>(卒業)  | and<br>months<br>(月)                                  |   |
| Total years of schooling mentioned above<br>(以上を通算した全学校教育修学年数)<br>as of April 1, 2019<br>(2019年4月1日現在) |  |   | years(年)  |   |

\* If the blank spaces above are not sufficient for the information required, please attach a separate sheet ((注)上欄に書ききれない場合には、適当な別紙に記入して添付すること。)

9. State the titles or subjects of books or papers (including graduation thesis authored by the applicant), if any, with the name and address of publisher and the date of publication.  
(著書, 論文(卒業論文を含む。))があればその題名, 出版社名, 出版年月日, 出版場所を記すこと。)

\* Accompany this form with a summary of the papers mentioned above. ((注)論文の概要を添付のこと)

10. Employment Record: Begin with the most recent employment, if applicable. (職歴)

| Name and address of organization<br>(勤務先及び所在地) | Period of employment<br>(勤務期間) | Position<br>(役職名) | Type of work<br>(職務内容) |
|--|--------------------------------|-------------------|------------------------|
|  | From<br>To                     |                   |                        |
|  | From<br>To                     |                   |                        |

11. Japanese language background, if any (日本語の学習歴)

i) Name and address of institution (学習機関及びその住所)

\_\_\_\_\_

ii) Period of study: from \_\_\_\_\_ to \_\_\_\_\_, \_\_\_\_\_  
 (学習期間) Year (年) Month (月) Year (年) Month (月) Years (年間)

iii) Name of teacher (教師名)

\_\_\_\_\_

iv) Japanese language proficiency: Evaluate your level and insert an X where appropriate in the following blank space. (日本語能力を自己評価のうえ、該当欄に×印を記入すること。)

|                 | Excellent(優) | Good(良) | Fair(可) | Poor(不可) |
|-----------------|--------------|---------|---------|----------|
| Reading (読む能力)  |              |         |         |          |
| Writing (書く能力)  |              |         |         |          |
| Speaking (話す能力) |              |         |         |          |

12. Foreign language proficiency: Evaluate your level and insert an X where appropriate in the following blank space. (外国語能力を自己評価のうえ、該当欄に×印を記入すること。)

|             | Excellent(優) | Good(良) | Fair(可) | Poor(不可) |
|-------------|--------------|---------|---------|----------|
| English(英語) |              |         |         |          |
| French(仏語)  |              |         |         |          |
| German(独語)  |              |         |         |          |
| Spanish(西語) |              |         |         |          |
|             |              |         |         |          |
|             |              |         |         |          |

13. Family background (家族状況)

| Name(氏名) | Relationship<br>(続柄) | Age<br>(年齢) | Occupation<br>(職業) |
|----------|----------------------|-------------|--------------------|
|          |                      |             |                    |
|          |                      |             |                    |
|          |                      |             |                    |
|          |                      |             |                    |

14. Accompanying Dependents (Provide the following information if you plan to bring any family members to Saga, Japan.) 同伴家族欄 (佐賀に来る場合、同伴予定の家族がいる場合に記入すること。)  
 \* He/She is advised to take into consideration various difficulties and the great expense that will be involved in finding living quarters. Therefore, those who wish to be accompanied by their families are advised to come alone first and let their dependents come after suitable accommodation has been found.

(注) 家族用の宿舎をみつめることは相当困難であり賃貸料も非常に割高になるのであらかじめ承知されたい。このため、留学生はまず単身で佐賀に来て、適当な宿舎をみつけた後、家族を呼び寄せること。

| Name<br>(氏名) | Relationship<br>(続柄) | Age<br>(年齢) |
|--------------|----------------------|-------------|
|              |                      |             |
|              |                      |             |
|              |                      |             |

15. Person to be notified in applicant's home country in case of emergency: (緊急の際の母国の連絡先)

i) Name in full(氏名): \_\_\_\_\_

ii) Address : with telephone number, facsimile number, e-mail address:(住所:電話番号,ファックス番号及び e-mail アドレスを記入のこと。)

現住所(present address): \_\_\_\_\_

電話番号/FAX 番号(Telephone/facsimile number): \_\_\_\_\_

E-mail address : \_\_\_\_\_

iii) Occupation (職業): \_\_\_\_\_

iv) Relationship (本人との関係): \_\_\_\_\_

16. Immigration Records to Japan. (日本への渡航記録)

| Date (日付)  | Purpose (渡航目的) |
|------------|----------------|
| From<br>To |                |
| From<br>To |                |

Date of application(申請年月日): \_\_\_\_\_

Applicant's signature(申請者署名): \_\_\_\_\_

Applicant's name (in Roman block capitals)(申請者氏名): \_\_\_\_\_

専攻分野及び研究計画  
Field of Study and Research Plan

Name in full,  
in your native language

(姓名(自国語))

\_\_\_\_\_, \_\_\_\_\_  
(Surname) (Given name) (Middle name)

Name in Roman capital  
letters

(姓名(ローマ字))

\_\_\_\_\_, \_\_\_\_\_  
(Surname) (Given name) (Middle name)

Nationality

(国籍)

\_\_\_\_\_

Proposed study program in Japan (Outline your field of study on this side and the specific of your study program on the reverse side of this sheet. This section is one of the most important references for selection. The statement must be typewritten or written in block letters. Additional sheets of paper may be attached if necessary. If plagiarism or fraud is discovered after selection, the selection will be cancelled retroactively.)

日本での研究計画;この研究計画は、選考の重要な参考となるので、表面に専攻分野の概要を、裏面に研究計画の詳細を具体的に記入すること。記入はタイプ又は楷書によるものとし、必要な場合は別紙を追加してもよい。なお、採用後に不正、盗用等が判明した場合は遡って採用を取り消す。

If you have Japanese language ability, write in Japanese.

(相当の日本語能力を有する者は、日本語により記入すること。)

1 Present Field of study(現在の専攻分野)

2 Your research topic in Japan: Describe articulately the research you wish to carry out in Japan.

(渡日後の研究テーマ:日本においてどういった研究がしたいかを明確に記入すること)

3 Study program in Japan: (Describe in detail and with specifics - particularly concerning the ultimate goal(s) of your research in Japan)

(研究計画: 詳細かつ具体的に記入し、特に研究の最終目標について具体的に記入すること。)

推 薦 書  
LETTER OF RECOMMENDATION

佐賀大学長 様  
To: President of Saga University

被推薦者  
Recommendee

氏名  
Full Name:

生年月日  
Date of Birth:

国籍  
Nationality:

日付  
Date: \_\_\_\_\_  
(month) (date) (year)

推薦者  
Recommender

署名  
Signature:

氏名  
Print Name:

役職  
Title and Institution  
(or Company):

現住所  
Present Address:

E メールアドレス  
E-mail Address:

証 明 書  
LETTER OF REFERENCE

佐賀大学大学院工学系研究科長 様

To: Dean of the Graduate School of  
Science and Engineering, Saga University

被証明者  
Referenced person

氏名  
Full Name: \_\_\_\_\_

生年月日  
Date of Birth: \_\_\_\_\_

国籍  
Nationality: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

日付  
Date: \_\_\_\_\_  
(month) (date) (year)

証明者  
Reference person  
署名  
Signature: \_\_\_\_\_  
氏名  
Print Name: \_\_\_\_\_

役職  
Title and Institution  
(or Company): \_\_\_\_\_

現住所  
Present Address: \_\_\_\_\_

E メールアドレス  
E-mail Address: \_\_\_\_\_