（様式5）

二国間交流事業 セミナー報告書

令和 6 年 3 月 31 日

独立行政法人日本学術振興会理事長 殿

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JPJSBP220236001

1. 事 業 名 相手国: エジプト (振興会対応機関: STDF)とのセミナー

2. セミナー名

（和文） 第4回メカトロニクス・ロボティクスの実践的教育に関するワークショップ

（英文） Fourth Egypt-Japan Workshop on Practical Education for Mechatronics and Robotics

3. 開 催 期 間 2024 年 2 月 25 日 ～ 2024 年 2 月 27 日 (3 日間)

【延長前】 年 月 日 ～ 年 月 日 (日間)

4. 開 催 地(都市名)

Egypt-Japan University of Science and Technology (E-JUST), Alexandria, Egypt

5. 相手国側代表者(所属機関名・職名・氏名【全て英文】)

Prof. Mahmoud El-Samanty, Egypt-Japan University of Science and Technology

6. 委託費総額(返還額を除く) 1,245,597 円

7. セミナー参加者数(代表者を含む)

	参加者数	うち、本委託費で渡航費または日本滞在費を負担した場合*
日本側参加者等	7 名	4 名
相手国側参加者等	15 名	0 名

参加者リスト(様式 B2)の合計人数を記入してください。該当がない箇所は「0」または「－」を記入してください。

＊ 日本開催の場合は相手国側参加者等の日本での滞在費等を負担した場合、相手国開催の場合は日本側参加者等の渡航費を委託費で負担した場合に記入してください。

8. セミナーの概要・成果等

(1) セミナー概要(セミナーの目的・実施状況。第三国からの参加者(基調・招待講演者等)が含まれる場合はその役割とセミナーへの効果を記載してください。関連行事 (レセプション、見学(エクスカーション)その他会合(別経費の場合はその旨を明記。)などがあれば、それも記載してください。委託費総額の50%に相当する額を超える費目間流用については、その変更理由と費目の内訳を変更しても計画の遂行に支障がないと考えた理由を記載してください。)

This seminar aims to exploit new strategies/opportunities for practical education/research in Mechatronics and Robotics. Our goal is to (1) provide a platform for Professors and Students from Egypt and Japan to discuss and collaborate on the potential synergies between Mechatronics/Robotics and Artificial Intelligence (AI) to further exploit Japanese-inspired practices, and (2) explore new methods/strategies for active learning and practical research relevant to the above-mentioned theme and context. Professors and Students will present talks on practical research tailored to the Seminar topic (day 1), and Students will team up on machine/robot creation and competition tasks (day 2). Besides strengthening ties on research and education between Egypt and Japan, the seminar is expected to explore the frontiers and opportunities for practical Mechatronics tailored to the Egyptian, Middle East and African environment in the contemporary era. Implementation was based on the following:

03/25:

- Introduction to Facilities and Research Laboratories in E-JUST.
- Plenary Talks from Waseda and E-JUST.
- Seminar on research activities from Waseda.
- Seminars and tutorials on research and education activities at the Department of Mechatronics and Robotics at E-JUST.

03/26:

- Plenary Talks from Waseda and E-JUST.
- Seminars and tutorials on research and education activities from Waseda and the Department of Mechatronics and Robotics at E-JUST.

03/27:

- Plenary Talks from Waseda and E-JUST.
- Invited Talks on research and education activities from E-JUST Graduates in the field of Mechatronics, Robotics and AI.

The invited participants from third countries gathered alumni from E-JUST's Mechatronics and Robotics (MTR) Department and selected E-JUST students with international/industrial exposure in the field of Mechatronics and Robotics. The relevant presentations provided insights and advice on practical education, practical research and career planning for the young generations of researchers and practitioners in the field of Mechatronics and Robotics.

(2) 学術的価値(セミナーにより得られた新たな知見や概念の展開等、学術的成果)

- Research and Education Style. The Faculty Members and Students reinforced the engineering and system integration principles for education and research in the fields of Mechatronics, Robotics and AI.
- Practical Skills. Participants reinforced the ability to approach the frontiers of Mechatronics and Robotics skills, and how cutting-edge algorithms and hardware link to solve practical issues in society.

(3) 相手国との交流(両国の研究者が協力してセミナーを開催することによって得られた成果)

Owing much to the interactions between researchers and students in the seminar, the following points were achieved:

- Foundational and state-of-the-art methodologies for the implementation of practical research and education in the field of Mechatronics and Robotics.
- Foundational networks for collaboration in terms of education and research between Waseda University and E-JUST in the field of Mechatronics and Robotics.

(4) 社会的貢献(社会の基盤となる文化の継承と発展、社会生活の質の改善、現代的諸問題の克服と解決に資する等の社会的貢献はどのようにあったか)

The workshop has contributed to tackle the following contemporary problems:

- Practical Research and Education: The workshop contributed to explore the latest educational practices and the robot-AI technological initiatives which have the potential to nurture a skilled workforce of the future to create new, productive, and resilient economies ubiquitously.
- Adaptation to Society: The workshop explored the frontiers of the coevolution of robotics and AI to trigger research and education initiatives to realize AI robots with advanced machine hardware that perform autonomously, adapt to changing environments, and used in practical domains in society – such as performing in dangerous/understaffed sites, developing human-robot interaction frontiers, supporting industrial tasks and our everyday lives.

(5) 若手研究者養成への貢献(若手研究者養成への取組、成果)

Through presentations and daily discussions, the workshop has contributed to train young researchers in the following themes:

- Skills on how to tackle and approach challenging research and education themes in the field of Mechatronics and Robotics.
- Skills on how to realize practical research and the fruitful education and career planning by leveraging the frontiers of Mechatronics, Robotics and AI.

(6) 将来発展可能性(本事業を実施したことにより、今後どのような発展の可能性が認められるか)

The workshop enables the following future possible developments:

- Further links of collaboration in education between Waseda and E-JUST. The undergraduate program at E-JUST has recently promoted further exchanges in cooperation with students and faculty members, e.g. corporations on Project-Based Learning activities.
- Further links for research cooperation between Waseda and E-JUST. We were able to gather participants from diverse spectrums in E-JUST. It is expected that the interactions created possibilities for collaboration between Waseda, E-JUST and other institutions (invited speakers).
- Holding the next workshop in Egypt showcasing the undergraduate research projects of both Japan and Egypt. This workshop is expected to attract the younger generations from Egypt, promoting friendly competitions in the field of Mechatronics and Robotics.

(7) その他(上記(2)～(6) 以外に得られた成果(論文発表等含む)があれば記載してください)

Not Applicable.