活動報告：A. 論文等（抜粋）

1. Basic Study on Etching Selectivity of Plasma Chemical Vaporization Machining by Introducing Crystallographic Damage into Work Surface,
Yasuhisa Sano, Toshiro Doi, Syuhei Kurokawa, Hideo Aida, Osamu Ohnishi, Michio Uneda, Yuu Okada, Hiroaki Nishikawa, and Kazuto Yamauchi
Key Engineering Materials Vol. 625 (2015) pp 550-553.

2. Study on a novel CMP/P-CVM fusion processing system (Type B) and its basic characteristics,
Koki Oyama, Toshiro K. Doi, Yasuhisa Sano, Syuhei Kurokawa, Hideo Aida, Tadakazu Miyashita, Senogwoo Kim, Tsutomu Yamazaki, and Hideaki Nishizawa, Proceedings of International Conference on Planarization/CMP Technology 2014, pp. 142-146.

3. Development of Basic-Type CMP/P-CVM Fusion Processing System (Type A) and Its Fundamental Characteristics,
Kousuke Shiozawa, Yasuhisa Sano, Toshiro Doi, Syuhei Kurokawa, Hideo Aida, Koki Oyama, Tadakazu Miyashita, Haruo Sumizawa, and Kazuto Yamauchi, Proceedings of International Conference on Planarization/CMP Technology 2014, pp. 275-278.

4. Dependence of GaN Removal Rate of Plasma Chemical Vaporization Machining on Mechanically Introduced Damage,
Yasuhisa Sano, Toshiro K. Doi, Syuhei Kurokawa, Hideo Aida, Osamu Ohnishi, Michio Uneda, Kousuke Shiozawa, Yu Okada, and Kazuto Yamauchi
Sensors and Materials, 26 (6) (2014) 429-434.

5 . Evaluation of subsurface damage in GaN substrate induced by mechanical polishing with diamond abrasives, Hideo AIDA, Hidetoshi TAKEDA, Seong-Woo KIM, Natsuko AOTA, Koji KOYAMA, Tsutomu YAMAZAKI, and Toshiro DOI, Appl. Surf. Sci. 292, 531–536 (2014).

6 . Surface Planarization of GaN-on-Sapphire Template by Chemical Mechanical Polishing for Subsequent GaN Homoepitaxy, Hideo AIDA, Seong-woo KIM, Toshimasa SUZUKI, Koji KOYAMA, Natsuko AOTA, Toshiro DOI, and Tsutomu YAMAZAKI, ECS Journal of Solid State Science and Technology, 3, P163-P168 (2014).

7 . Estimation of bowing in hetero-epitaxial GaN-on-sapphire substrate at elevated temperatures by X-ray diffraction rocking curve measurement, Hideo AIDA, Seong-Woo KIM, and Toshimasa SUZUKI, J. Cryst. Growth, J. Crystal Growth, 412 (2015)60–66.

8 . Precise Mechanical Polishing of Brittle Materials with Free Diamond Abrasives Dispersed in micro-nano-bubble Water, Hideo AIDA, Seong-Woo KIM, Kenjiro IKEJIRI, Toshiro DOI, Tsutomu YAMAZAKI, Kiyoshi SESHIMO, Koji KOYAMA, Hidetoshi TAKEDA, and Natsuko AOTA, Precision Engineering (in press).

9． Novel Chemical Mechanical Polishing/Plasma-Chemical Vaporization Machining (CMP/P-CVM) Combined Processing of Hard-to-Process Crystals Based on Innovative Concepts, Toshiro K. Doi, Yasuhisa Sano, Syuhei Kurowaka, Hideo Aida, Osamu Ohnishi, Michio Uneda and Koki Ohyama, Sensors and Materials, 26 (6) (2014) 403-415.

10. Basic Study on Etching Selectivity of Plasma Chemical Vaporization Machining by Introducing Crystallographic Damage into Work Surface,Yasuhisa Sano, Toshiro Doi, Syuhei Kurokawa, Hideo Aida, Osamu Ohnishi, Michio Uneda, Yuu Okada, Hiroaki Nishikawa, and Kazuto Yamauchi,Key Engineering Materials, Vol.625, pp.550-553

11. Current Status and Future Prospects of GaN Substrates for Green Devices, Toshiro Doi：Sensor and Materials, (2013),25, 3, pp.141-154

12. N-Face Finishing Influence on Geometry of Double-Side Polished GaN Substrate, Koji KOYAMA, Hideo AIDA, Michio UNEDA, Hidetoshi TAKEDA, Seong-Woo KIM, Hiroki TAKEI, Tsutomu YAMAZAKI, and Toshiro DOI, Int. J. Automation Technology 8, 121 – 127 (2014).

13. Surface Planarization of GaN-on-Sapphire Template by Chemical Mechanical Polishing for Subsequent GaN Homoepitaxy, Hideo AIDA, Seong-woo KIM, Toshimasa SUZUKI, Koji KOYAMA, Natsuko AOTA, Toshiro DOI, and Tsutomu YAMAZAKI, ECS Journal of Solid State Science and Technology, 3, P163-P168 (2014).

14. Growth of Thick GaN Layers on Laser-processed Sapphire Substrate by Hydride Vapor Phase Epitaxy, Koji KOYAMA, Hideo AIDA, Seong-Woo KIM, Kenjiro IKEJIRI, Toshiro DOI, and Tsutomu YAMAZAKI, J. Crystal Growth, 403, 38-42 (2014).

15. Approach to High Efficient CMP for Power Device Substrates, S. KUROKAWA, T. DOI, C. WANG, Y. SANO, H. AIDA, K. OYAMA, and K. TAKAHASHI, ECS Transactions (ECST), Volume 60, Issue 1, pp.641-646 (2014).

活動報告：B. 学会発表、著書等（抜粋）

1. "KENMA", the Origin of Manufacturing, Planarization CMP and Its Future -A Breakthrough toward High-efficient Machining of Hard-to-machine Innovative Materials -, Toshiro Doi, International Conference on Planarization/CMP Technology 2014, Special Talk 1 (19-21 November 2014, Kobe, Japan)【招待講演】

2. Development of Basic-Type CMP/P-CVM Fusion Processing System (Type A) and Its Fundamental Characteristics, K. Shiozawa, et al.
International Conference on Planarization/CMP Technology 2014, P26 (19-21 November 2014, Kobe, Japan)

3. Design and Prototyping of Innovative CMP/P-CVM Fusion Processing Machine for Hard-to-Process Crystals and Its Processing Characteristics, T. Doi, et al.
Workshop on Ultra-Precision Processing (WUPP) for Wide-gap Semiconductors 2014, Abstracts p.14 (20-22 August 2014, Bath, UK)【招待講演】

4. High-speed Etching of Wide-gap Semiconductors Using Atmospheric Pressure Plasma, Y. Sano, et al.
Workshop on Ultra-Precision Processing (WUPP) for Wide-gap Semiconductors 2014, Abstracts p.8 (20-22 August 2014, Bath, UK)【招待講演】

5. 革新的CMP/P-CVM融合装置の設計・試作（第4報）；A-type装置による炭化ケイ素を加工対象とした平坦化特性の評価, 塩沢 他, 2014年度精密工学会秋季大会学術講演会, A17, P-22, 講演論文集 pp. 15-16,（2014/09/16-18, 鳥取大学, 鳥取）

6. 革新的CMP/P-CVM融合加工装置の設計・試作（第5報）—B-Type装置による各種難加工材料の基本的加工特性とその評価—, 大山 他,
2014年度精密工学会秋季大会学術講演会, A18, 講演論文集 pp. 17-18,（2014/09/16-18, 鳥取大学, 鳥取）

7. Removal Rate of Plasma Chemical Vaporization Machining of Intentionally Damaged Surface by Mechanical Action, K. Shiozawa, et al.
15th International Conference on Precision Engineering (ICPE2014), P22, Abstracts pp. 667-668, P22 (22-25 July 2014, Kanazawa, Japan)

8. 2014 EMN Spring Meeting, February 2014, Las Vegas, USA, Fabrication of Gallium Nitride Substrate with Novel Approach, Hideo AIDA, Toshiro DOI, Hidetoshi TAKEDA, Koji KOYAMA, Syuhei KUROKAWA, and Yasuhisa SANO【招待講演】

9. China Semiconductor Technology International Conference, March 2014, China, Approach to High Efficient CMP for Power Device Substrates, K. Shiozawa, Y. Sano, T. Doi, S. Kurokawa, H. AIDA, O.Ohnishi, M. Uneda, Y. Okada, and K. Yamauchi【招待講演】

10. Workshop on Ultra-precision Processing for Wide bandgap Semiconductors, 2014, August 2014, Bath, Japan, Design and Prototype of Innovative CMP/P-CVM Fusion Processing Machine for Hard-to-Process Crystals and Its Processing Characteristics, Toshiro K. DOI, Yasuhisa SANO, Syuhei KUROKAWA, Hideo AIDA, Koki Ohyama, Seongwoo KIM, Osamu OHNISHI, and Michio UNEDA.【招待講演】

11. Proc. of International Conference on Planarization/CMP Technology 2014（平成26年11月）, Study on a novel CMP/P-CVM fusion processing system (Type B) and its basic characteristics, Koki OYAMA, Toshiro K. DOI, Yasuhisa SANO, Syuhei KUROKAWA, Hideo AIDA, Tadakazu MIYASHITA and Senogwoo Kim

12. Handbook of Ceramics Grinding and Polishing(2E),(2014), T. Doi, I. D. Marinescu, E. Uhlmann, (Editors)

１３. グリーンデバイス用難加工材料(SiC, GaN, ダイヤモンド)基板の革新的加工プロセス技術、土肥　ほか、月刊トライボロジー第28巻、第11号（2014）pp.16-18

活動報告：C. 科研Sプロジェクト連携定例ミーティング・重要会議等

ニュースレターNo.1発行以降、下記の定例ミーティングを行いました。各グループからの実験結果の報告に基づく議論や、プロジェクト全体の進捗状況の把握、その他トピックス的に参加者から最新の関連情報を提供頂きました。今後も定期的に実施して参りますので、関係皆様の積極的なご参加をお願い致します。

- 2014年4月25日　共同研究三者会議　於 東京（プラナリゼーションCMP委員会会議場）
- 2014年6月2日　定例ミーティング　於 九州大学 筑紫キャンパス
- 2014年 7月25日　定例ミーティング　於 金沢市・大名茶屋（金沢駅前ホテル）
- 2014年11月10日　定例ミーティング　於 九州大学 筑紫キャンパス
- 2014年11月18日　共同研究三者会議　於 神戸（ICPT会議場）
- 2014年11月28日　共同研究三者会議　於 京都（学振136創立50周年記念シンポジウム会場）