



Evaluation, control, and device application of point defects in wide bandgap semiconductors

ÿ Date and time: Wednesday, November 17, 2021, 13:00-17:00 ÿ Location: Online

Point defects in wide bandgap semiconductors have negative aspects such as deterioration of bipolar device characteristics due to carrier recombination. On the other hand, it also has the advantage that it can be applied to the development of quantum effect devices as a single photon source or spin source, making it a truly double-edged product. It's a sword. Focusing on the positive side, a spin with a high brightness single photon source and long coherence time was discovered even at room temperature. There are high hopes that this technology will lead to devices that are much more practical and versatile than conventional methods. But something like this The understanding of point defects is still not sufficiently advanced, and quantum application technology is only just getting started. Book The study group focused on several wide-gap semiconductors and Si, and invited experts to discuss point defects in each material. I would like to discuss this and think about future prospects.

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13:00ÿ13:05 Opening greetings 1. Point defects in silicon carbide (SiC): Effects and applications on devices 13:05ÿ13:35 Yoshihide Umeda (University of Tsukuba) 13:35-14:05 2. Vanadium defects in SiC crystals: characteristics and applications Koichi Murata (Central Research Institute of Electric Power Industry) 14:05ÿ14:35 3. Evaluation of carbon-related hole traps in MOVPE-grown GaN Yutaka Tokuda (Aichi Institute of Technology) 14:35-15:05 4. Quality evaluation of gallium nitride crystal using omnidirectional photoluminescence (ODPL) method Kazunobu Kojima (Tohoku University) Break 15:05-15:25 5. Diamond quantum technology using lattice defects 15:25ÿ15:55 Takayuki Iwasaki (Tokyo Institute of Technology) 6. Knowledge about point defects in Si and research introduction on point defect control in Si power devices 15:55-16:25 Koji Sueoka (Okayama Prefectural University) 16:25-16:55 7. Theoretical prediction and material design/exploration of point defect characteristics of nitride/oxide semiconductors Fumiyasu Ohba (Tokyo Institute of Technology) 16:55-17:00 Closing remarks ÿ Participation reception: From the WEB participation reception system (click here*) Please register by Thursday, November 11th. Noboru When recording, consent to prohibited matters is required. Please note that the materials for the day will be in PDF format. *If this guide is in print, please access it from http://annex.jsap.or.jp/adps/pdf/kenkyuukai21.pdf. ÿ Participation fee: (tax included) Please make online payment after registering. Advanced Power Semiconductor Subcommittee members*4,000 yen, Subcommittee student members 1,000 yen, General 6,000 yen, General students 1,000 yen *If you are a supporting member of the Advanced Power Semiconductor Subcommittee, you will be treated as a member of the Advanced Power Semiconductor Subcommittee. ÿ Advertisement acceptance: Proceedings of the conference are 4,000 yen per page. Apply online From the advertisement reception system (here). ÿdeadline: Friday, November 5]. Contact: (*For inquiries regarding various procedures, please contact the Japan Society of Applied Physics Secretariat) Yasuto Hijikata (Saitama University) e-mail: yasuto@opt.ees.saitama-u.ac.jp

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