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SICOXS CORPORATION (Chiyoda-ku, Tokyo President & CEO: Mitsuharu Kato), supported by Kaga Electronics Co., Ltd.(Chiyoda-ku, Tokyo President & COO: Ryoichi Kado) has developed bonded SiC wafer technology in collaboration with Independent Institute of Advanced Industrial Science and Technology ( Tsukuba-shi Ibaragi-ken, President: Ryoji Chubachi) and Kyoto University (Sakyo-ku Kyoto-shi, Kyoto President: Hiroshi Matsumoto). For the development of practical applications SICOXS had applied to “The 3<sup>rd</sup> Project of Industry and Academia Collaborative Development Works in 2013” of JST -- Japan Science and Technology Agency (Independent Administrative Agency). As a result of examination, here we announce that SICOXS’s application has been formally accepted.

The adopted theme “Bonded SiC wafer process and production equipment ” is to pursue low-cost bonded SiC wafer as the end item and to solve the fundamental manufacturing technological problems in addition to developing mass production system which also proves small-scale production for the above product. After the development is completed, the production plan of bonded SiC wafer will be ready to supply several hundred thousand of bonded SiC wafers per year. Kaga Electronics Co.,Ltd. is to be in charge of the marketing when the product is commercialized.

The technology for the development was published by Kyoto University at the International Conference on Silicon Carbide and Related Materials (ICSCRM 2013) which was held from September 23 to October 4 in 2013. Collaborated with Hideki Takagi, the team leader at the Research Center for Ubiquitous MEMS and Micro Engineering of the National Institute of Advanced Industrial Science and Technology with Jun Suda, Associate Professor in Graduate School of Engineering, Kyoto University (SiC material, device/process technology, evaluation technology) and also with SICOXS CORPORATION (SiC material, wafer production · process technology, evaluation technology) material research & development venture, this joint development has been realized by the good combination of each strong technology. By bonding a high quality monocrystalline film on a low-cost supporting wafer without degrading the quality of the monocrystalline layer, the manufacturing cost can be reduced to less than half of the conventional cost of production.

In recent years, highly efficient and smaller SiC power device has been applied to the power conditioner for solar power generation and the vehicle inverter. Accordingly, it is now in the process of commercialization. Under the circumstance, the demand for larger diameter of SiC wafer from 4 inches to 6 inches has been accelerated and also the demand for low-cost wafer is now increasing more than ever. However, in the present method of manufacturing SiC wafer, it has been difficult to improve the quality of crystal and to reduce the production cost at the same time.

If the cost of the SiC wafer can be reduced, SiC device with high-voltage and low-loss characteristics can contribute to energy saving in various fields such as automobiles, computers, industrial equipment, power transmission, etc. In the future, more market expansion can highly be expected. Based on the results of the development, Koga Electronics Co., Ltd. and SICOXS CORPORATION will provide low-cost bonded SiC wafer to the monocrystalline SiC wafer market where the needs are increasing. In this situation, we will contribute to the progress and development of the power semiconductor and its application products.



**SICOXS CORPORATION**

Kandamatsunagacho23, Chiyoda-ku,  
Tokyo 101-0023, Japan  
URL : <http://sicoxs.com>