

## Results of Research

The good results are obtained since we started the research of nitrides.

Please contact us about questions, consultation and collaboration of research.

Year	Classification	Results of R&D
2003	Patent	H. Minoura, A. Mabuchi, K. Manabe, "Method for Manufacture of Group III Nitrides" <i>Japanese Patent No.2003-394213</i> .
2005	Thesis	A. Mabuchi, Y. Iwase, E. Yasuda, T. Sugiura and H. Minoura, "Preparation of GaN Crystals by a Reaction of Ga <sub>2</sub> O <sub>3</sub> with Li <sub>3</sub> N" <i>J. Ceram. Soci. Jpn</i> , 113[4] 291-296(2005). <a href="http://www.ceramic.or.jp/welcomej.html">http://www.ceramic.or.jp/welcomej.html</a>
		A. Mabuchi, Y. Iwase, T. Sugiura and H. Minoura, "Low Temperature Synthesis of LiGaO <sub>2</sub> Using Lithium Nitride" <i>J. Ceram. Soci. Jpn</i> , 113[5] 368-372(2005). <a href="http://www.ceramic.or.jp/welcomej.html">http://www.ceramic.or.jp/welcomej.html</a>
		Mabuchi, "A Novel Synthetic Route to Preparation of Group III Nitrides by Using Li <sub>3</sub> N" <i>A doctoral thesis of Gifu University, Doctor of Engineering Kou No.83</i> .
2006	Domestic conference	37 <sup>th</sup> Annual Meeting of Union of Chemistry-Related Societies in Chubu Area, Japan(Aichi, Aichi Institute of Technology Yakusa Campus) 12-13 Nov. 2006 「Preparation of Visible Light Response Photo-catalyst by Nitriding TiO <sub>2</sub> Using Li <sub>3</sub> N」(2K07) ○T. Ajioka, A. Mabuchi, T. Sugiura and H. Minoura Synthesis of Tantalum Nitride by the Reaction of Ta <sub>2</sub> O <sub>5</sub> with Li <sub>3</sub> N(2K08) ○M. Hayashi, A. Mabuchi, T. Sugiura and H. Minoura

2007	Patent	<p>A. Mabuchi, H. Minoura, T. Sugiura, T. Hirano and M. Hayashi, "Method of Manufacture of Group III Nitrides and Transition Metal Nitrides" <i>Japanese Patent</i> No.2007-133756.</p> <p>A. Mabuchi, H. Minoura and T. Sugiura "Method for Manufacture of GaN" <i>Japanese Patent</i> No.2007-196134.</p> <p>H. Minoura, A. Mabuchi, K. Manabe, "Method for Manufacture of Group III Nitrides at Low Temperature and Low Pressure" <i>Japanese Patent</i> No.2003-394213. Registered. No.4034261.</p>
	Thesis	<p>A. Mabuchi, T. Hirano, T. Sugiura and H. Minoura, Preparation of GaN Crystals by a Reaction of Ga with Li<sub>3</sub>N" <i>IEICE Technical Report</i>, LQE 107(23) pp.103-107, 2007 1004.</p>
	International conference	<p>International Conference on Advanced Materials and Applications, (Department of Physics, Shivaji University, Kolhapur, India) 15-17 Novem.2007</p> <p>「Preparation of GaN Crystals by the Reaction of Li<sub>3</sub>N with Ga<sub>2</sub>O<sub>3</sub> and Ga」</p> <p>○A. Mabuchi</p>
	Domestic conference	<p>2007 Autumn Meeting of the Japan Institute Metals, (Gifu University) 19-21 Sept.2007</p> <p>「Crystal Growth of GaN by the Reaction of Ga<sub>2</sub>O<sub>3</sub> with Li<sub>3</sub>N in Liquid Ga」(S4-8 20 Sept.)</p> <p>○T. Zhang, A. Mabuchi, T. Sugiura and H. Minoura</p> <p>「Synthesis of GaN by Using Ga and Li<sub>3</sub>N」(S4-9 20 Sept.)</p> <p>○T. Hirano, A. Mabuchi, T. Sugiura and H. Minoura</p> <p>「Synthesis of TiN by the Reaction of Li<sub>3</sub>N」(208 20 Sept.)</p> <p>○ T. Ajioka, A. Mabuchi, T. Sugiura and H. Minoura</p> <p>「Synthesis of TaN by Using Li<sub>3</sub>N as a Nitrogen Sauce」(209 20 Sept.)</p> <p>○M. Hayashi, A. Mabuchi, T. Sugiura and H. Minoura</p>

		<p>IEICE Technical Committee Conference(Fukui, Memorial Hall, Bunkyo Campus, Fukui University) 12 Oct.2007  「Preparation of GaN Crystals by a Reaction of Ga with Li<sub>3</sub>N」  ○A. Mabuchi, T. Hirano, T. Sugiura and H. Minoura</p>
		<p>17th Japan Materials Research Society Symposium (Tokyo, Nihon University Faculty of Science and Technology, Surugadai Campus)7-9 Decm.2007  「Crystal Growth of GaN by the Reaction of Ga<sub>2</sub>O<sub>3</sub> with Li<sub>3</sub>N in Liquid Ga」(Q-P01-G)  T. Zhang, A. Mabuchi, T. Sugiura and H. Minoura</p>
2008	Thesis	T. Zhang, A. Mabuchi, T. Sugiura, and Minoura, “Crystal Growth of GaN by the Reaction of Ga <sub>2</sub> O <sub>3</sub> with Li <sub>3</sub> N in Liquid Ga”, <i>Trans. Mater, Res. Jpn.</i> , in press.
2009	Thesis	T. Hirano, A. Mabuchi, T. Sugiura and Minoura, “Synthesis of GaN crystals by the reaction of Ga with Li <sub>3</sub> N in NH <sub>3</sub> atmosphere” <i>J. Cryst. Growth</i> , [311]3040-3043(2009).