卓越した大学院

「流動ダイナミクス知の融合教育研究世界拠点」

平成 26 年度　博士課程後期学生国際会議派遣　参加報告書

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学会名 Conference's name	The 28th IEEE International Conference on Micro Electro Mechanical Systems
開催地 Venue (Name of the facility, city & country)	Estoril Centro De Congressos, Avenida Amaral, 2765-192, Estoril, Portugal
日程 Conference period	18-22 Jan. 2015
発表タイトル Presentation Title	ASSEMBLED COMB-DRIVE XYZ-MICROSTAGE WITH LARGE DISPLACEMENTS FOR LOW TEMPERATURE MEASUREMENT SYSTEMS

【発表概要　Brief summary of your presentation】

In this research, we report the novel design, fabrication and testing of an assembled comb-drive XYZ-microstage that produces highly decoupled motions into X-, Y-, and Z-directions for the three-dimensional (3D) scanning stage of magnetic resonance force microscopy. The XYZ-microstage based on assembling technology consists of three separated parts, i.e., a comb-drive XY-microstage, two comb-drive Z-microstages and a bottom silicon base substrate. The separated parts are assembled together by using micro manipulators and a guide block of stainless steel. It is demonstrated that the assembled XYZ-microstage can achieve large displacements of 25.2 μm in X direction, 20.4 μm in Y direction and 58.5 μm in Z direction.

【他の講演等から得られた知見、感想等。What you learned from other presentations, general impression you had, etc.】

I very enjoyed the 28th IEEE International Conference on Micro Electro Mechanical Systems which was held in Estoril, Portugal, because I have gotten much useful information, such as the general situation of MEMS development, in-depth study for my research topic. For example, an oral presentation named “DYNAMICALLY-BALANCED FOLDED-BEAM SUSPENSIONS”, talked about a complete methodology for designing a new folded-beam suspension which responds as a linear spring at the fundamental resonance. This is in sharp contrast to the response of standard folded-beam suspensions. For my research, I will consider designing a new structure of folded-flexure springs to improve the linear response of support springs.

Simultaneously, I knew many other research fellows and discussed with each other to widen the scope of knowledge and build the interpersonal relationships. Finally, Professor Masayoshi Esashi with great contribution to this field in forty years of hard work, won IEEE Andrew S. Grove Award, which inspires me to move on.

【口頭発表した時の写真】