

**Reconfigurable modular robot for endoluminal surgery
: study in a multidisciplinary research setting**

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日時: 2010年 2月1日(月) 18:00-19:30

会場: 東京大学工学部2号館 3F 31A会議室

要旨

Miniaturized surgical devices are promising for the future development of minimally invasive and endoluminal surgery, but the dexterity and therapeutic functions of these devices are limited. In the framework of the European project ARES, a reconfigurable modular robotic system is proposed to perform screening and interventions of the gastrointestinal tract. In the proposed system, millimeter-sized robotic modules are ingested and tasked to assemble to an articulated mechanism in the stomach cavity. The assembled robot is intended to change its configuration according to the target location and perform precise intervention. Based on this concept, preliminary results will be presented covering the robotic schemes for the endoluminal reconfigurable platform and the design of their modules with structural functions. In addition to the research results and possible future scenarios, some European projects will be presented to introduce how European young researchers/students collaborate in a multidisciplinary research setting.

