

## MEMS ジャイロスコープの世界的第一人者 Andrei M. Shkel 教授による特別セミナー Special Seminar by Prof. Andrei M. Shkel, The world-leading expert in MEMS gyroscopes

日 時：2016年5月13日（金曜日） 13:00～15:00

13 May 2016 (Friday) 13:00～15:00

参加無料，事前申込不要 Admission free, No advanced registration required

場 所：東北大学 青葉山キャンパス マイクロ・ナノマシニング研究教育センター 3階 セミナー室  
Tohoku University, Aobayama Campus, Micro-Nanomachining Research & Education Center (MNC),  
3rd floor, Seminar room

(田中(秀)研究室ウェブサイト「アクセス」ページの地図上 A14 の建物)

(Building A14 on the map at <http://www.mems.mech.tohoku.ac.jp/access/>)

主 催：田中(秀)研究室，マイクロ・ナノマシニング研究教育センター

Organized by S. Tanaka Laboratory and MNC, Tohoku University

講 師：

Prof. Andrei M. Shkel

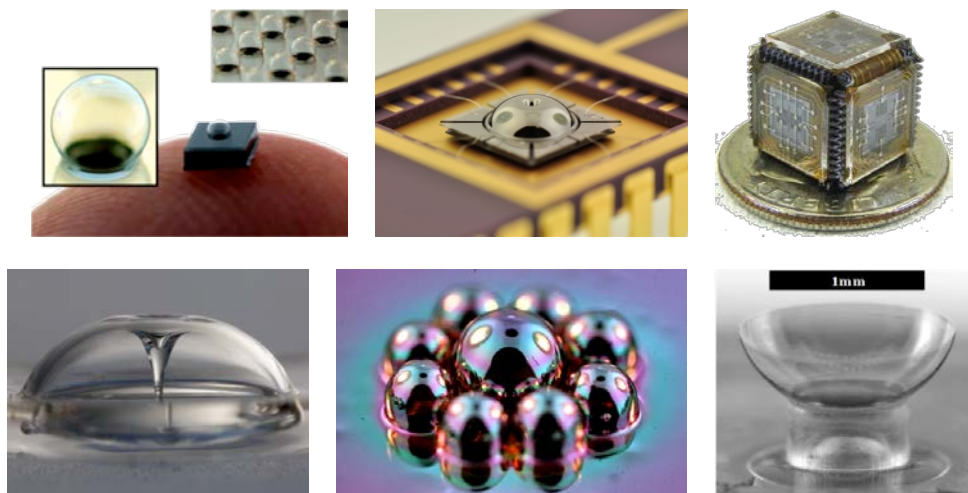
Department of Mechanical and Aerospace Engineering, University of California, Irvine



Dr. Andrei M. Shkel has been on faculty at the University of California, Irvine since 2000. From 2009 to 2013, he was on leave from academia serving as a Program Manager in the Microsystems Technology Office of DARPA. Dr. Shkel has been on a number of editorial boards, most recently as Editor of IEEE/ASME Journal of MicroElectroMechanical Systems (JMEMS) and the founding chair of the IEEE Inertial Sensors conference (INERTIAL). Dr. Shkel is the IEEE Fellow. He has been awarded in 2013 the Office of the Secretary of Defense Medal for Exceptional Public Service, the 2009 IEEE Sensors Council Technical Achievement Award, and the 2005 NSF CAREER award. He received his Diploma (1991) in Mechanics and Mathematics from Moscow State University, Ph.D. degree (1997) in Mechanical Engineering from the University of Wisconsin at Madison, and experienced postdoc (1999) at Berkeley Sensors and Actuators Center (BSAC).

要 旨：

After briefly reviewing the fundamentals of MEMS gyroscope, the state-of-the-art MEMS gyroscope technology is introduced. The performance of MEMS gyroscopes are continuously improving to reach the navigation grade, which has been conventionally achieved only by optical gyroscopes. Various types of precise MEMS gyroscopes and advanced control systems developed by Prof. Shkel's Laboratory are presented, including a quad mass gyroscope, a micro hemispherical resonator gyroscope (HRG), and origami-like 3D assembly of MEMS gyroscopes. In addition, this talk touches on novel atomic MEMS for ultra-precise timing reference and magnetic sensing. After this seminar, the attendee can understand that MEMS technology can further extend its sensing precision beyond the present level.



### 【予習資料】

田中(秀)研究室ウェブサイト「インターネット記事」のページ

- [State-of-the-art MEMS Gyroscopes for Autonomous Cars](#)
- [チップ上にフーコー振子 — 高性能 MEMS ジャイロ 自動運転などに向けて開発が進む](#)
- [MEMS はもうかる 「IEEE MEMS 2016」学会報告](#)