Principal Researcher	Masanori Hangyo	**Number of Researchers**	3
Research Institution • Department • Title	Professor, Research Center for Superconductor Photonics, Osaka University	**Location of Institution**	Suita, Osaka

Title of Project	Advanced Application of Laser-Excited Terahertz Waves
Abstract of Research Project	Terahertz (THz) waves, which are electromagnetic waves ranging from 0.1 to 10 THz, have been an unexploited frequency region for long time and have been limited to the academic studies. Recently, technologies of generating THz waves by exciting semiconductors and superconductors with ultrashort laser pulses have made great progress and the expectation for applying them to various fields including industry is increasing. As a succession of the research project "Development of Laser Terahertz Technology" undergone during FY1999-FY2002, this study aims at building the basis for wide applications of THz technology ranging from basic science to industry. The themes are as follows. (1) Generation of high intensity and broadband THz waves (2) Construction of THz magneto-optical spectroscopic system and its application to solid state physics (3) Application of THz spectroscopy to photonic crystals (4) Application of THz spectroscopy to bio-materials (5) Development of low-price and compact THz spectroscopic system using multimode laser diode
References	M. Hangyo, T. Nagasima and S. Nashima: "Spectroscopy by pulsed terahertz radiation", Meas. Sci. Tech. 13 (2002) 1727-1738. F. Miyamaru, T. Kondo, T. Nagashima and M. Hangyo: "Large polarization change in two-dimensional metallic photonic crystals in subterahertz region", Appl. Phys. Lett. 82 (2003) 2568-2570.
Term of Project	Fiscal years 2003-2007 . (5years)

Budget Allocation (in thousand of yen)	FY2003	FY2004	FY2005	FY2006	FY2007	TOTAL
	18,200	19,900	17,400	7,600	7,300	70,400

Homepage Address	http://dev.rcsuper.osaka-u.ac.jp/index.html