Title	Studies of the development of optical fiber sensors for biochemical analysis
Sub Title	
Author	高井, 信治(Takai, Nobuharu) 佐久間, 一郎(Sakuma, Ichiro) 福井, 康裕(Fukui, Yasuhiro) 金子, 明子(Kaneko, Akiko) 藤江, 忠雄(Fujie, Tadao) 田口, 一宏(Taguchi, Kazuhiro) 長岡, 昭二(Nagaoka, Shoji)
Publisher	共立薬科大学
Publication year	1991
Jtitle	共立薬科大学研究年報 (The annual report of the Kyoritsu College of Pharmacy). No.36 (1991.),p.68- 68
JaLC DOI	
Abstract	
Notes	抄録
Genre	Technical Report
URL	https://koara.lib.keio.ac.jp/xoonips/modules/xoonips/detail.php?koara_id=AN00062898-00000036-0068

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Studies of the Development of Optical Fiber Sensors for Biochemical Analysis*

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Abstract: An optical fiber sensor utilizing Thymol blue and an ion-exchange resin complex in a cellulose acetate membrane was developed. By monitoring several different chromophores of Thymol blue, the sensor could measure the pH of the solution from 1.0 to 12.0 with good reproducibility. An optical fiber glucose sensor utilizing a cellulose acetate membrane containing glucose oxidase, 2,7-diaminofluorene dihydrochloride, and sodium *N*-(3-sulfopropyl) -3,3''-5,5'-tetramethylbenzidine was developed. Reflectance, changes at 580 nm were large enough to trace changes in glucose concentration in physiological saline solution. Key Words: Optical fiber sensor.

* 本報告は *Artificial Organs*, 15 (2), 86—89 (1991) に発表.

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