Phosphorescence Excitation Spectrum of Benzophenone at Liq.N_2 Temperature

INTRODUCTION

By using the low temperature measurement accessory, fluorescence/phosphorometric analysis at the liquid nitrogen temperature (-196°C) is possible. The fine structure of a sample, that is not shown at a room temperature, can be analyzed. F-7000 can measure the phosphorescence spectrum and phosphorescence lifetime and the information on the triplet excited state of the sample can be obtained. Even by the high resolution analysis with a narrow slit width, the peaks can be measured depending on the difference in the vibrational states of benzophenone with a sufficient S/N.

SAMPLE

SAMPLE NAME : Benzophenone
: $(C_6H_5)_2CO$ mol.wt. 182.22
(Wako, Osaka, Japan)

SOLVENT : Ethanol

CONCENTRATION : 1.0×10^{-3} mol/L

ACCESARRY

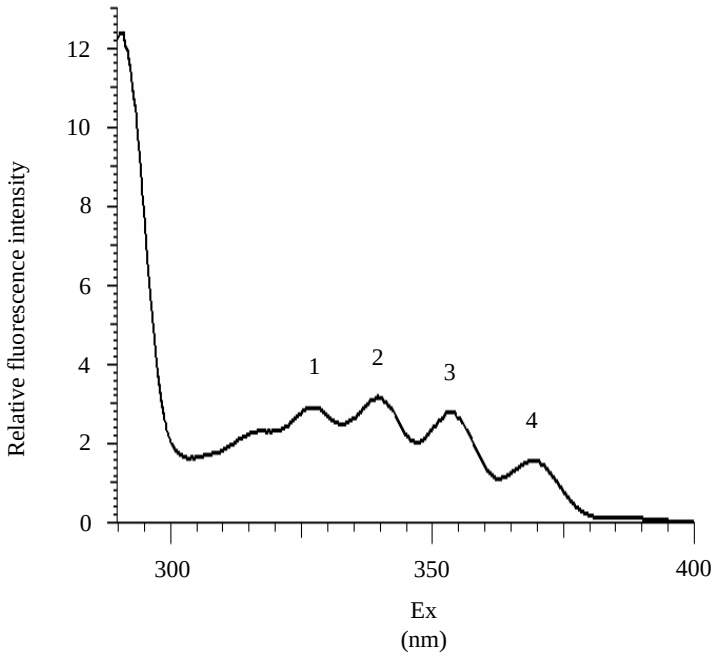
Low temperature measurement accessory (P/N : 5J0-0112)

INSTRUMENT CONDITIONS

INSTRUMENT	: F-7000		
DATA MODE	: Phosphorescence	SCAN SPEED	: 60 nm/min
CHOPPING FREQUENCY	: 40 Hz	RESPONSE	: 0.5 s
EM WAVELENGTH	: 444 nm	PHOTOMULTIPLIER	: R3788
EX BANDPASS	: 2.5 nm	PHOTOMULTIPLIER VOL.	: 250 V
EM BANDPASS	: 20 nm		

PEAKS (nm)

1 : 327
2 : 339
3 : 354
4 : 369



[Corrected spectrum]

KEY WORDS
Material·Processing Material Related, Industrial Chemical, Benzophenone, Diphenyl Ketone, Organic Solvent, Low Temperature, Liquid Nitrogen, 77K, Phosphorescence Excitation Spectrum, Liq.N_2 Temperature, LN_2, FL, F-7000

Fluorophotometer (FL)

Sheet No. FL080018-01

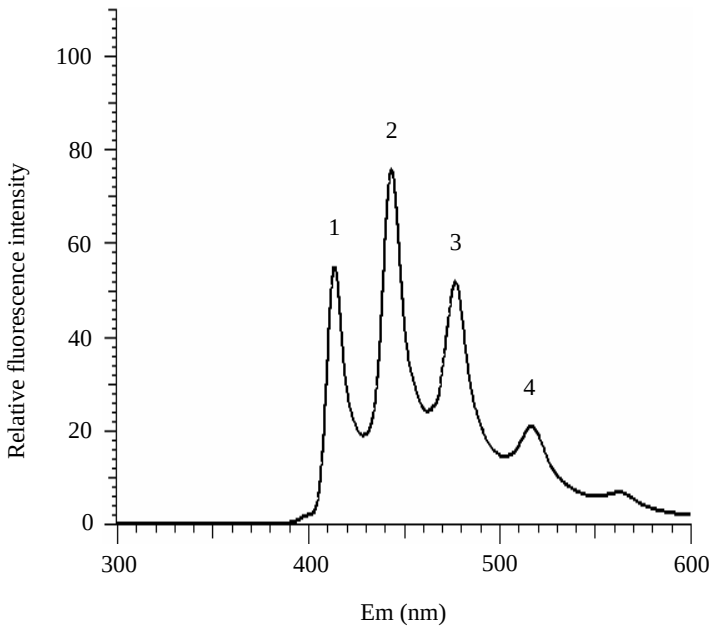
Fluorescence Spectrum of Benzophenone at Liq.N_2 Temperature

INTRODUCTION

By using the low temperature measurement accessory, fluorescence/phosphorometric analysis at the liquid nitrogen temperature (-196°C) is possible. The fine structure of a sample, that is not shown at a room temperature, can be analyzed. F-7000 can measure the phosphorescence spectrum and phosphorescence lifetime and the information on the triplet excited state of the sample can be obtained. Even by the high resolution analysis with a narrow slit width, the peaks can be measured depending on the difference in the vibrational states of benzophenone with a sufficient S/N.

SAMPLE	ACCESARRY
SAMPLE NAME : Benzophenone : $(C_6H_5)_2CO$ mol.wt. 182.22 (Wako, Osaka, Japan) SOLVENT : Ethanol CONCENTRATION : 1.0×10^{-3} mol/L	Low temperature measurement accessory (P/N : 5J0-0112)

INSTRUMENT CONDITIONS				PEAKS (nm)
INSTRUMENT	: F-7000			1 : 414
EX WAVELENGTH	: 282 nm	RESPONSE	: 0.5 s	2 : 443
EX BANDPASS	: 10 nm	PHOTOMULTIPLIER	: R3788	3 : 477
EM BANDPASS	: 2.5 nm	PHOTOMULTIPLIER VOL.	: 250 V	4 : 517
SCAN SPEED	: 60 nm/min			



[Corrected spectrum]

KEY WORDS
Material･Processing Material Related, Industrial Chemical, Benzophenone, Diphenyl Ketone, Organic Solvent, Low Temperature, Liquid Nitrogen, 77K, Fluorescence Spectrum, Liq.N_2 Temperature, LN_2, FL, F-7000

Fluorophotometer (FL)

Sheet No. FL080018-02

Phosphorescence Spectrum of Benzophenone at Liq.N_2 Temperature

INTRODUCTION

By using the low temperature measurement accessory, fluorescence/phosphorometric analysis at the liquid nitrogen temperature (-196°C) is possible. The fine structure of a sample, that is not shown at a room temperature, can be analyzed. F-7000 can measure the phosphorescence spectrum and phosphorescence lifetime and the information on the triplet excited state of the sample can be obtained. Even by the high resolution analysis with a narrow slit width, the peaks can be measured depending on the difference in the vibrational states of benzophenone with a sufficient S/N.

SAMPLE

SAMPLE NAME : Benzophenone
: $(C_6H_5)_2CO$ mol.wt. 182.22
(Wako, Osaka, Japan)

SOLVENT : Ethanol

CONCENTRATION : 1.0×10^{-3} mol/L

ACCESARRY

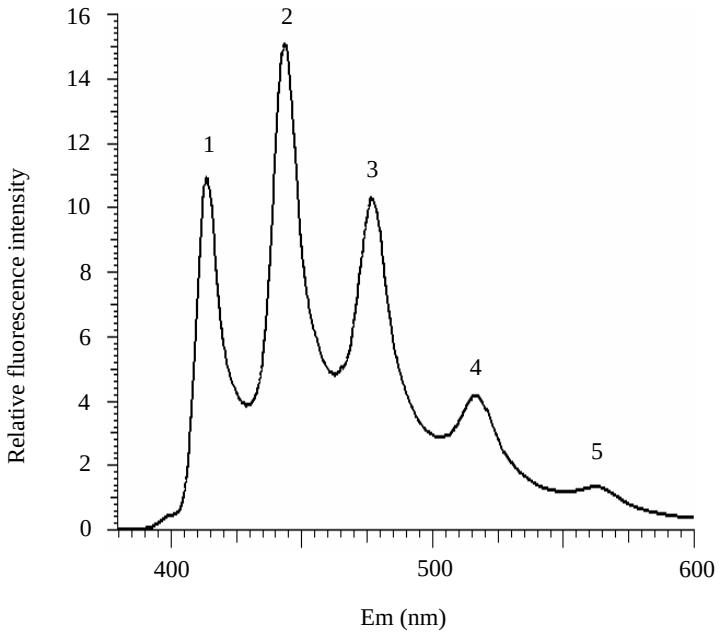
Low temperature measurement accessory (P/N : 5J0-0112)

INSTRUMENT CONDITIONS

INSTRUMENT : F-7000
DATA MODE : Phosphorescence
CHOPPING FREQUENCY : 40 Hz
EX WAVELENGTH : 282 nm
EX BANDPASS : 20 nm
EM BANDPASS : 2.5 nm
SCAN SPEED : 60 nm/min
RESPONSE : 0.5 s
PHOTOMULTIPLIER : R3788
PHOTOMULTIPLIER VOL. : 250 V

PEAKS (nm)

1 : 414
2 : 443
3 : 477
4 : 517
5 : 562



[Corrected spectrum]

KEY WORDS
Material･Processing Material Related, Industrial Chemical, Benzophenone, Diphenyl Ketone, Organic Solvent, Low Temperature, Liquid Nitrogen, 77K, Phosphorescence Spectrum, Liq.N_2 Temperature, LN_2, FL, F-7000

Fluorophotometer (FL)

Sheet No. FL080018-03

3D Phosphorescence Spectrum of Benzophenone at Liq.N_2 Temperature

INTRODUCTION

By using the low temperature measurement accessory, fluorescence/phosphorometric analysis at the liquid nitrogen temperature (-196°C) is possible. The fine structure of a sample, that is not shown at a room temperature, can be analyzed. F-7000 can measure the phosphorescence spectrum and phosphorescence lifetime and the information on the triplet excited state of the sample can be obtained. Even by the high resolution analysis with a narrow slit width, the peaks can be measured depending on the difference in the vibrational states of benzophenone with a sufficient S/N.

SAMPLE

SAMPLE NAME : Benzophenone
: $(C_6H_5)_2CO$ mol.wt. 182.22
(Wako, Osaka, Japan)

SOLVENT : Ethanol

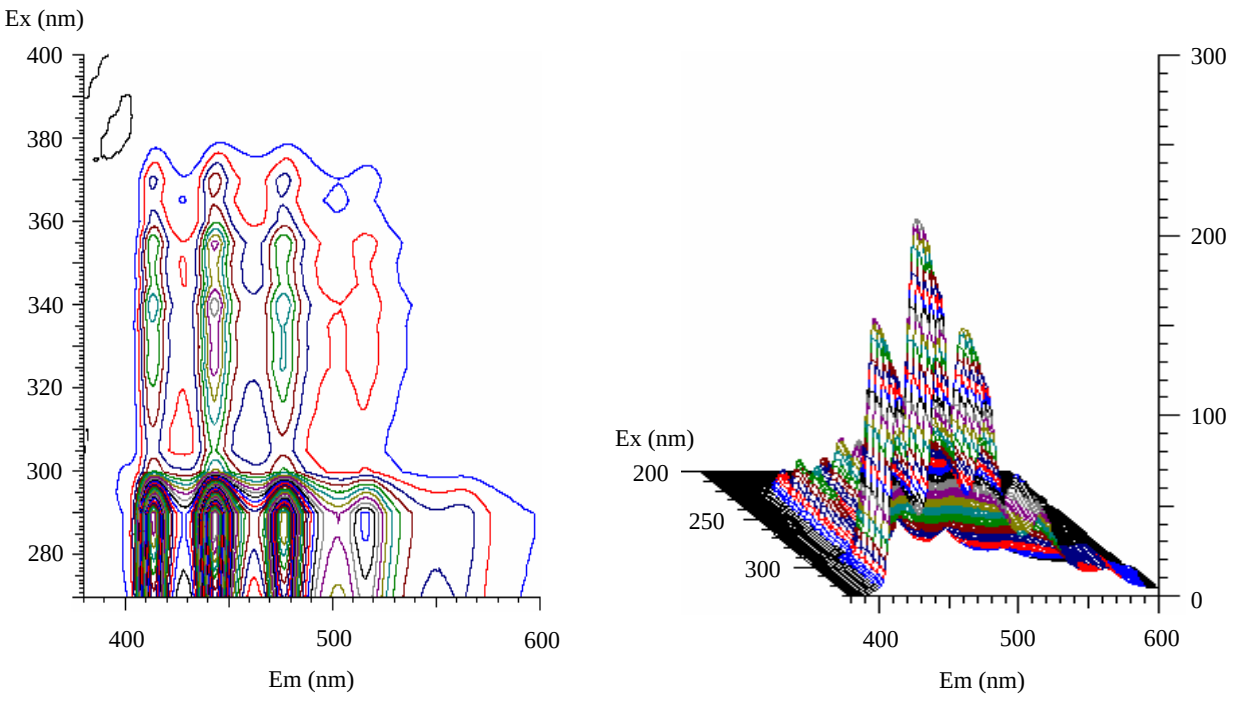
CONCENTRATION : 1.0×10^{-3} mol/L

ACCESARRY

Low temperature measurement accessory (P/N : 5J0-0112)

INSTRUMENT CONDITIONS

INSTRUMENT	: F-7000				
DATA MODE	: Phosphorescence	SCAN SPEED	: 240 nm/min	FULLSCALE	: 300
CHOPPING FREQUENCY	: 40 Hz	RESPONSE	: Auto	DIVISION NUMBER	: 5
EX BANDPASS	: 5 nm	PHOTOMULTIPLIER	: R3788		
EM BANDPASS	: 5 nm	PHOTOMULTIPLIER VOL.	: 400 V		



[Corrected spectrum]

KEY WORDS
Material･Processing Material Related, Industrial Chemical, Benzophenone, Diphenyl Ketone, Organic Solvent, Low Temperature, Liquid Nitrogen, 77K, Three-dimensional Phosphorescence Spectrum, 3D, Liq.N_2 Temperature, LN_2, FL, F-7000

Fluorophotometer (FL)

Sheet No. FL080018-04

Phosphorescence Lifetime of Benzophenone

INTRODUCTION

By using the low temperature measurement accessory, fluorescence/phosphorometric analysis at the liquid nitrogen temperature (-196°C) is possible. The fine structure of a sample, that is not shown at a room temperature, can be analyzed. F-7000 can measure the phosphorescence spectrum and phosphorescence lifetime and the information on the triplet excited state of the sample can be obtained. Even by the high resolution analysis with a narrow slit width, the peaks can be measured depending on the difference in the vibrational states of benzophenone with a sufficient S/N.

SAMPLE

SAMPLE NAME : Benzophenone
: $(C_6H_5)_2CO$ mol.wt. 182.22
(Wako, Osaka, Japan)

SOLVENT : Ethanol

CONCENTRATION : 1.0×10^{-3} mol/L

INSTRUMENT CONDITIONS

INSTRUMENT : F-7000

DATA MODE : Phosphorescence Lifetime

CHOPPING FREQUENCY : 40 Hz

EX WAVELENGTH : 282 nm

EM WAVELENGTH : 444 nm

EX BANDPASS : 10 nm

EM BANDPASS : 10 nm

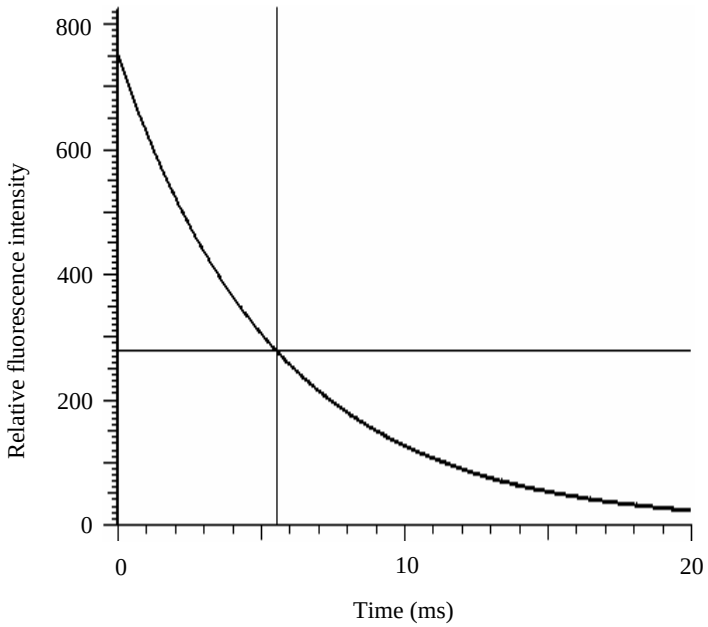
RESPONSE : 0.002 s

PHOTOMULTIPLIER : R3788

PHOTOMULTIPLIER VOL. : 250 V

ACCESARRY

Low temperature measurement accessory (P/N : 5J0-0112)



[τ = 5.539 ms]

KEY WORDS

Material･Processing Material Related, Industrial Chemical, Benzophenone, Diphenyl Ketone, Organic Solvent, Phosphorescence Lifetime, FL, F-7000

Fluorophotometer (FL)

Sheet No. FL080018-05