

List of Instruments at CMCR, Kochi University (As for October, 2019)

Availability	○	Available
	△	Available under condition

Last modified: August 1st, 2019

□ Instruments using radiation & X-ray

Equipment/Apparatus/Device	Model	Manufacturer	Availability	Person in charge	Laboratory name	Remarks
X-ray CT scanner	Aquilion PRIME Focus Edition	Canon Medical Systems Corporation	△	Y. Yamamoto, T. Matsuzaki	Core Logging Lab.	X-ray control
Multi sensor core logger	MSCL-S	Geotek	△	M. Ikehara, T. Matsuzaki	Core Logging Lab.	Radiation control
XRF core scanner "TATSCAN"	JSX-3600CAZ TATSCAN-F2	JEOL	△	Y. Yamamoto, T. Matsuzaki	Core Logging Lab.	X-ray control
X-ray diffractometer (XRD)	X'pert PRO	PANalytical	△	Y. Yamamoto, S. Tonai, T. Matsuzaki	X-ray & SEM Lab.	X-ray control
X-ray fluorescence spectrometer (XRF)	Magix PRO / PW2440/00	PANalytical	△	Y. Yamamoto, T. Matsuzaki	X-ray & SEM Lab.	X-ray control
Micro-focus X-ray CT scanner	Xradia	Zeiss	△	M. Murayama, T. Matsuzaki	Geochemistry Lab.	X-ray control
XRF core scanner "TTRAX"	ITRAX	COX Analytical Systems	△	M. Murayama, T. Matsuzaki	Geochemistry Lab.	X-ray control

□ Other Instruments

Equipment/Apparatus/Device	Model	Manufacturer	Availability	Person in charge	Laboratory name	Remarks
Color spectrophotometer sensor system	MSCL-XYZ	Geotek	○	M. Ikehara	Core Logging Lab.	
Core image scanner		Alphacorn	○	M. Ikehara	Core Logging Lab.	
Ultrasonic propagation velocity measuring instrument	Sonic-Viewer SX	OYO Corporation	○	M. Iwai	Core Logging Lab.	
Bead sampler (desktop)	3491A1	Rigaku	○	Y. Yamamoto, T. Matsuzaki	Rock Processing Lab.	
Muffle furnace	F0810	Yamato Scientific	○	Y. Yamamoto, T. Matsuzaki	Rock Processing Lab.	
Planetary ball mill	Pulverisette-5	FRITSCH	○	Y. Yamamoto, T. Matsuzaki	Rock Processing Lab.	
Desktop mini press frame	CDM-20M	RIKEN	○	Y. Yamamoto, T. Matsuzaki	Rock Processing Lab.	
Magnetic separator	Type LB-1	Nichika	○	Y. Yamamoto, T. Matsuzaki	Rock Processing Lab.	
Horizontal lapidary machine	PW-2	IMAHASHI MFG	○	T. Okumura	Rock Cutting Lab.	
Desktop mini corer	SC-3	Natsuhara-Giken	○	T. Okumura	Rock Cutting Lab.	
Diamond cut saw for medium sample	TS-200PS	IMAHASHI MFG	○	T. Okumura	Rock Cutting Lab.	
Diamond cut saw for large sample	AC-18	IMAHASHI MFG	○	T. Okumura	Rock Cutting Lab.	
Geological lapping machine for preparing thin sections	Prepa-Lap MG-300	Maruto	○	T. Okumura	Rock Cutting Lab.	
Geological lapping machine for preparing fine thin sections	Doctor-Lap ML-180	Maruto	○	T. Okumura	Rock Cutting Lab.	
Geological lapping machine for preparing thin sections	Roto pol Type 05236112	Struers	○	T. Okumura	Rock Cutting Lab.	
Diamond cut saw for small sample	MC-110	Maruto	○	T. Okumura	Rock Cutting Lab.	
Pass-through superconducting rock magnetometer for U-Channel samples	Model 760R (U-channel)	2G	○	Y. Yamamoto	Paleo & Rock Magnetism Lab.	
Superconducting rock magnetometer for discrete samples	Model 755	2G	△	Y. Yamamoto	Paleo & Rock Magnetism Lab.	
Automated spinner magnetometer with alternating field demagnetizer	DSPIN	Natsuhara-Giken	△	Y. Yamamoto	Paleo & Rock Magnetism Lab.	
Thermal demagnetizer	TDS-1	Natsuhara-Giken	○	Y. Yamamoto	Paleo & Rock Magnetism Lab.	Possible to have vacuum heating in around 10 Pa
Alternating field (AF) demagnetizer	DEM-95	Natsuhara-Giken	○	Y. Yamamoto	Paleo & Rock Magnetism Lab.	
Spinner magnetometer	SMD88	Natsuhara-Giken	○	Y. Yamamoto	Paleo & Rock Magnetism Lab.	
Magnetic balance	NMB-89	Natsuhara-Giken	○	Y. Yamamoto	Paleo & Rock Magnetism Lab.	
Magnetic property measurement system (MPMS)	MPMS-XL5	Quantum Design	○	Y. Yamamoto	Paleo & Rock Magnetism Lab.	
Vibrating Sample Magnetometer (VSM)	MicroMag 3900 VSM	Lake Shore (PMC)	○	Y. Yamamoto	Paleo & Rock Magnetism Lab.	
Pulse magnetizer	MMPM10	MagneticMeas.	○	Y. Yamamoto	Paleo & Rock Magnetism Lab.	
Alternating gradient magnetometer	MicroMag 2900 AGM	Lake Shore (PMC)	○	Y. Yamamoto	Data Processing Room	
Kappabridges for measurements of magnetic susceptibility	KLY-4S, CS3	Agico	○	Y. Yamamoto	Data Processing Room	Impossible under Ar atmosphere
Three Frequency Kappabridges for Measurements of Magnetic Susceptibility	MFK1-FA, CS4, CS-L	Agico	○	Y. Yamamoto	Data Processing Room	Impossible under Ar atmosphere
Pentapycnometer	PPYC-KU	Quantachrome	○	G. Uramoto	Sedimentology Lab.	
Microwave digestion system	Multiwave3000	Anton Paar	○	K. Okamura	Marine Environmental Lab.	
Inductively coupled plasma atomic emission spectrometer, desktop style (ICP-AES)	Optima4300DV CYCROM	PerkinElmer	○	K. Okamura, T. Ueda	Marine Environmental Lab.	Argon(Ar) gas: 1500JPY/hour
Quadrupole inductively coupled plasma mass spectrometer (ICP-MS)	ICAP Q ICP-MS	ThermoFisherScientific	△	Y. Nishio	Marine Environmental Lab.	Argon(Ar) gas: 1500JPY/hour
Laser Ablation System (213nm) for ICP-MS	LSX-213 G2 +	Teledyne CETAC KYOTO ELECTRONICS MANUFACTURING	△	Y. Nishio	Marine Environmental Lab.	
Density/specific gravity meter	DA-650		○	K. Okamura	Marine Environmental Lab.	
Temperature controlled room	MCU-T1020	Dalton	○	K. Okamura	Marine Environmental Lab.	Ask us more details
3D printer	MARK TWO	Markforged	○	K. Okamura	Marine Environmental Lab.	Nylon: 100JPY/cm ³
3D printer (for ABS resin)	da Vinci 1.0 Pro	xyz printing	○	K. Okamura	Marine Environmental Lab.	Carbon: 1500JPY/cm ³ ABS resin: 30JPY/m
3D printer (for PLA resin)	da Vinci mini	xyz printing	○	K. Okamura	Marine Environmental Lab.	PLA resin: 20JPY/m
Ion chromatograph (IC)	ICS-1500	Dionex	○	K. Okamura	Water Chemistry Lab.	
UV-VIS spectrometer with temperature and pressure controller	V-650	JASCO	○	K. Okamura	Water Chemistry Lab.	
Fluorometer with temperature controller	FP-6500	JASCO	○	K. Okamura	Water Chemistry Lab.	
Pressure resistant tester	ST-08	KIMOTO ELECTRIC	○	K. Okamura	Water Chemistry Lab.	
Isotope ratio mass spectrometer (IR-MS)	MAT253	Thermo Finnigan	○	M. Murayama	Inorganic Geochemistry Lab.	
Stable isotope analysis (IR-MS)	Isoprime	GV Instruments	○	M. Ikehara	Inorganic Geochemistry Lab.	
# Thermal ionization mass spectrometer (TIMS)	TRITON	Thermo Finnigan	△	K. Okamura (T. Ishikawa, JAMSTEC)	Inorganic Geochemistry Lab.	Only Sr, Nd: Ask us more details
Laser Diffraction Particle Size Analyzer	MasterSizer 2000	Sysmex	○	G. Uramoto	Inorganic Geochemistry Lab.	
UV-VIS spectrometer	UV-2550PC	SHIMADZU	○	M. Ikehara, T. Ueda	Organic Geochemistry Lab.	
Gas chromatograph (GC)	Agilent 6890N, 7890B	Agilent	○	M. Ikehara	Organic Geochemistry Lab.	
Carbon analysis coulometer	UIC CM5012	UIC	○	M. Ikehara	Organic Geochemistry Lab.	
Organic elemental analyzer	Flash EA1112	Thermo Finnigan	○	M. Ikehara	Organic Geochemistry Lab.	
High-Speed solvent extraction device	Dionex ASE-350	ThermoScientific	○	M. Ikehara	Organic Geochemistry Lab.	
High-Speed concentration device	Turbo Vap LV	Zymark	○	M. Ikehara	Organic Geochemistry Lab.	
Ultrasonic homogenizer	Sonifier	Branson	○	M. Ikehara	Organic Geochemistry Lab.	
Gas chromatograph/mass spectrometer with thermal desorption equipments (GC/MS)	Agilent 6890+5973N	Agilent	○	M. Ikehara	Organic Geochemistry Lab.	
Elemental analyzer/isotope ratio mass spectrometer (EA/IRMS)	Finnigan DELTA plus Advantage	Thermo Finnigan	○	M. Ikehara	Organic Geochemistry Lab.	
Gas chromatograph/combustion isotope ratio mass spectrometry (GC/IRMS)	Finnigan DELTA plus XP	Thermo Finnigan	○	M. Ikehara	Organic Geochemistry Lab.	
# Double-focusing high resolution ICP multi-collector mass spectrometer (ICP-MC-MS)	NEPTUNE	Thermo Finnigan	△	K. Okamura (T. Ishikawa, JAMSTEC)	ICP-MS Lab.	Only Pb: Ask us more details
Quadrupole inductively coupled plasma mass spectrometer (ICP-MS)	ELAN-DRCLII	PerkinElmer	○	K. Okamura	ICP-MS Lab.	Argon(Ar) gas: 1500JPY/hour
Field-emission scanning electron microscope (FE-SEM)	JEOL JSM-6500F	JEOL	○	M. Iwai, G. Uramoto	X-ray & SEM Lab.	If you wish to use EBSD, please indicate in the application form
Sputter Coater (Pt)	JFC-1600	JEOL	○	Y. Yamamoto, T. Matsuzaki	X-ray & SEM Lab.	
Electron probe microanalyzer (EPMA)	JEOL JXA-8200	JEOL	○	Y. Yamamoto, T. Matsuzaki	Spectrochemical Analysis Lab.	
Carbon coater	JEE-420	JEOL	○	Y. Yamamoto, T. Matsuzaki	Spectrochemical Analysis Lab.	
Micro laser raman spectrometer	T64000	Horiba Jobin Yvon inc	○	Y. Yamamoto, T. Ueda, T. Matsuzaki	Spectrochemical Analysis Lab.	
Gamma-ray spectrometer	GWL-120-15	Nki Glass	○	M. Murayama	Spectrochemical Analysis Lab.	

DNA sequencer	ABI PRISM 3130xl	Applied Biosystems	○	Y. Ujije	Molecular Biology Lab.	
Thermal cycler	GeneAmp PCR	Applied Biosystems	○	Y. Ujije	Molecular Biology Lab.	
Anaerobic glove box	Type C	TOYOBO/COY	△	Y. Ujije	Microbiology Lab.	
Tabletop ultracentrifuge	Optima	Beckman Coulter	△	Y. Ujije	Microbiology Lab.	
Autoclave	KT-2346	ALP	○	Y. Ujije	Microbiology Lab.	
High speed refrigerated micro centrifuge	MX-300	Tomy	○	Y. Ujije	Microbiology Lab.	
Autoclave	KS-323	Tomy	○	Y. Ujije	Microbiology Lab.	
Fluorescent microscopy	BX-51-34-FLD1-SP&DP-50-B	Olympus	○	Y. Ujije	Microbiology Lab.	
Fluorescent objective microscope	SZX12-RFL3-1&DP12-B	Olympus	○	Y. Ujije	Microbiology Lab.	
Fluorescent phase contrast microscope	BX-51-34-FLD1-SP	Olympus	△	Y. Ujije	Microbiology Lab.	
Small incubator	BR-33FL/MR	TAITEC	○	Y. Ujije	Microbiology Lab.	
Shaking thermostat bath	Personal LT-10F/SX	TAITEC	○	Y. Ujije	Microbiology Lab.	
Refrigerated centrifugal vacuum concentrators	DNA120	Thermo Quest	○	Y. Ujije	Microbiology Lab.	
High performance liquid chromatograph		SHIMADZU	△	Y. Ujije	Microbiology Lab.	
Large incubator	MLU-2-HGT	Iwashiya	△	Y. Ujije	Geobio-reactor Lab. No. 2	
Shaking incubator	MLU-3-MR-16	Iwashiya	△	Y. Ujije	Geobio-reactor Lab. No. 2	
GCD color digital camera system	AxioCam HR	Zeiss	○	H. Yasuda	Microscope & Imaging Lab.	
Film camera	MC200CH1P	Zeiss	○	H. Yasuda	Microscope & Imaging Lab.	
Universal photo microscope	Axiophoto2(PH2-DIC)	Zeiss	○	H. Yasuda	Microscope & Imaging Lab.	
Universal photo microscope	Axiophoto2(PH2-FL/Ph/DIC)	Zeiss	○	H. Yasuda	Microscope & Imaging Lab.	
Universal photo microscope	Axioplan 2 Imaging E(P2IE-FL/Ph/DIC)	Zeiss	○	H. Yasuda	Microscope & Imaging Lab.	
Stereomicroscope	Stemi SV6(SV6KL2-R)	Carl Zeiss MicroImaging Japan	○	H. Yasuda	Microscope & Imaging Lab.	
Stereomicroscope	Stemi SV11(SV11-R)	Carl Zeiss MicroImaging Japan	○	H. Yasuda	Microscope & Imaging Lab.	
Polarizing microscope	Axiolab Pol(LABPOL-T/RS)	Carl Zeiss MicroImaging Japan	○	H. Yasuda	Microscope & Imaging Lab.	
Polarizing microscope	Axiolab Pol(LABPOL-T1)	Carl Zeiss MicroImaging Japan	○	H. Yasuda	Microscope & Imaging Lab.	
Polarizing microscope	Axioplan2 Imaging Pol (P2IPOL-T/R2)	Carl Zeiss MicroImaging Japan	○	H. Yasuda	Microscope & Imaging Lab.	
Polarizing microscope	Axiophoto2(PH2-FL/Ph/DIC)	Carl Zeiss MicroImaging Japan	○	H. Yasuda	Microscope & Imaging Lab.	
Inverted fluorescent microscope	Axioverrt(V200M-FL/Ph/DIC)+AxioCam HR	Carl Zeiss MicroImaging Japan	○	H. Yasuda	Microscope & Imaging Lab.	
Color laser microscope	VK-8550	Keyence	○	H. Yasuda	Microscope & Imaging Lab.	
Digital microscope	VH-8000	Keyence	○	H. Yasuda	Microscope & Imaging Lab.	
Digital microscope	VHX-2000	Keyence	○	M. Iwai	Microscope & Imaging Lab.	
Cooling/heating temperature control stage		LINKAM	○	Y. Yamamoto	Microscope & Imaging Lab.	
Refractive Index Measurement using the Thermal Immersion Method	RIMS2000	Kyoto Fission Track	○	M. Ikehara	Microscope & Imaging Lab.	
γ-ray imaging analyzer	BAS2500	FUJII FILM	○	H. Yasuda	Microscope & Imaging Lab.	
Luminescent image analyzer	LAS-1000plus	FUJII FILM	△	H. Yasuda	Microscope & Imaging Lab.	
Fluorescence imaging analyzer	FLA3000G/LASplus	FUJII FILM	○	H. Yasuda	Microscope & Imaging Lab.	
Stereomicroscope for the observation of two people	StemiSV11	Zeiss	○	H. Yasuda	Microfaleontology Lab.	
Polarizing microscope with image combining system	DM6000 / PowerMosaicPlus	Leica	○	M. Iwai	Geochemistry Lab.	
Laser core cutter			△	H. Yasuda	Hallway (Platform)	For acrylic tube
Core splitter			○	G. Uramoto	Machine Shop	
Core liner cutter			○	G. Uramoto	Hallway (Platform)	
Liquid nitrogen freezing system		Taiyo Toyo Sanso	△	Y. Ujije	B-Sampling Room	Ask us more details
Freeze dryer (large)	FD-550	EYELA	○	M. Iwai	Sampling Lab.	
Freeze dryer (small)	FRD-82M	IWAKI Asahi Techno Glass	○	M. Iwai	Sampling Lab.	

List of Instruments at Kochi, JAMSTEC

Equipment/Apparatus/Device	Model	Manufacturer	Availability	Person in charge	Laboratory name	Remarks
# Secondary ion mass spectrometer at high spatial resolution (NanoSIMS)	NanoSIMS 50L	CAMECA	△	M. Ito, JAMSTEC	Ion Microprobe Lab.	
# Secondary ion mass spectrometer (IMS-6F)	IMS 6f	CAMECA	△	M. Ito, JAMSTEC	X-ray & SEM Lab.	