

Infrastructure	URL	Description	Contact
Materials Science			
High-Voltage Electron Microscope	https://www.kbsi.re.kr/eng_equipment0301	<ul style="list-style-type: none"> Observation of 3D atomic structure of materials (resolution: 0.12 nm, specimen tilt angle: $\pm 60^\circ$) Chemical signal detection with a high collection rate In-situ and cryo-EM analysis with customized specimen holder 	Seungjo Yoo (sjyoo78@kbsi.re.kr / +82-42-865-3622)
15 T Fourier Transform Ion Cyclotron Resonance Mass Spectrometer	https://www.kbsi.re.kr/eng_equipment0301	<ul style="list-style-type: none"> The world's best mass resolution: > 10,000,000 Dual ion source: ESI/MALDI Applicable methods: MALDI imaging, APCI, APPI, LC/MS/MS Various MS/MS techniques: CID, ECD, ETD, IS-CAD 	Kyungsoon Jang (ksjang@kbsi.re.kr / +82-43-240-5196) Jongshin Yoo (jongshin@kbsi.re.kr / +82-43-240-5150)
High-Field Nuclear Magnetic Resonance	https://www.kbsi.re.kr/eng_equipment0301	<ul style="list-style-type: none"> The sensitivity of the cryogenic probe to ^1H is more than 4 times, which shortens the experiment time by a factor of 1/16 Protein structural studies can be performed with samples having a concentration of 100 μM or less 	Eunhee Kim (nmr@kbsi.re.kr / +82-43-240-5063) Hae-Kap Cheong (haekap@kbsi.re.kr / +82-43-240-5062) Kyung-Seok Ryu (ksryu@kbsi.re.kr / +82-43-240-5064)
High-Resolution Secondary Ion Mass Spectrometer	https://www.kbsi.re.kr/eng_equipment0301	<ul style="list-style-type: none"> Low detection limit (~ 1 ppm) with a mass resolution of 10,000 and transmission of 50% Multi-collection system with charge-mode electrometers can measure Pu isotopes simultaneously 	Sookjoo Kim (shrimp@kbsi.re.kr / +82-43-240-5174)
Advanced In Situ Nanosurface Analysis System	https://www.kbsi.re.kr/eng_equipment0301	<ul style="list-style-type: none"> Nano material properties of metal/oxide/semiconductor are analyzed without exposure to air Real-time analysis with automatic processing devices Able to measure electronic characteristics in the low/high temperature 	Hyungjung Yun (hjun@kbsi.re.kr / +82-42-865-3666)
Nano Secondary Ion Mass Spectrometer	https://www.kbsi.re.kr/eng_equipment0301	<ul style="list-style-type: none"> The world's best spatial resolution(50 nm) Multiple detection of impurity elements in a small area High-sensitivity imaging of light elements including hydrogen Highly reproducible analysis of insulating samples 	Mirang Byeon (bmr12@kbsi.re.kr / +82-51-974-6119) Taeun Hong (tehong@kbsi.re.kr / +82-51-974-6109) Jeongu Ok (jwok@kbsi.re.kr / +82-51-974-6130)
Femtosecond Multidimensional Laser Spectroscopic System	https://www.kbsi.re.kr/eng_equipment0301	<ul style="list-style-type: none"> 2D vibrational and electronic spectroscopy in the IR and visible frequency ranges Pump-probe transient absorption spectroscopy of molecular systems and materials Coherent Raman spectroscopy utilizing nonlinear optical effects (SRS, CARS) 	Hanju Rhee (hjrhee@kbsi.re.kr / +82-2-6943-4141) Sanghee Nah (snah@kbsi.re.kr / +82-2-6943-4158)
Biological Sciences			
Bio High-Voltage Electron Microscope	https://www.kbsi.re.kr/eng_equipment0301	<ul style="list-style-type: none"> 3D modeling of cell organelles by high tilting($\pm 70^\circ$) with high resolution (0.15 nm) Enhanced high-contrast imaging using high-accelerating-voltage/in-column energy filter Analysis of a large area with high resolution by a limitless panorama function Cryo-EM analysis by the rapid and continuous freezing of biological specimens 	Yang Hoon Huh (hyh1127@kbsi.re.kr / +82-43-240-5441) Hee-Seok Kweon (hskweon@kbsi.re.kr / +82-43-240-5440)
7 T Human MRI System	https://www.kbsi.re.kr/eng_equipment0301	<ul style="list-style-type: none"> Actively shielded compact 7 Tesla superconductin magnet Actively shielded gradient and 8-channel transmit and 32-channel receive RF systems Ultra-high-resolution images and high-resolution spectroscopic analysis Multi-nuclear(^{13}C, ^{23}Na and ^{31}P) imaging and spectroscopic analysis 	Chulhyun Lee (chulhyun@kbsi.re.kr / +82-43-240-5090) Gyung-Goo Cho (gyunggoo@kbsi.re.kr / +82-43-240-5102) Sukhoon Oh (sukhoonoh@kbsi.re.kr / +82-43-240-5178)
SPE-800-MHz NMR-MS System	https://www.kbsi.re.kr/eng_equipment0301	<ul style="list-style-type: none"> Equipment for analysis of biological component and natural product High resolution and high sensitivity of high-field NMR spectrometer equipped with cryogenic probe High throughput analysis using automatic sample change system Separation and structural determination of unknown compounds using LC-SPE-NMR/MS system 	Geumsook Hwang (gshwang@kbsi.re.kr / +82-2-6908-6200) Youngae Jung (jya0819@kbsi.re.kr / +82-2-6908-6233)

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<i>Physics and Engineering Sciences</i>			
HANARO Complex in KAERI	http://wolf.zeus.go.kr/worldwide/20140122000000000834	HANARO is a multi-purpose research reactor with a high neutron flux. 30 MWth multi-purpose irradiation, radioisotope, neutron beam, activation analysis, neutron transmutation doping D2O as reflector, 7 beam ports Ex-core neutron irradiation facility Residual stress instrument High resolution powder diffractometer Four circle neutron diffractometer Neutron radiography facility Vertical type reflectometer 40m small angle neutron scattering instrument Korea institute of science and technology ultra-small angle neutron scattering instrument 18m small angle neutron scattering instrument	Tae Joo Kim (tj@kaeri.re.kr) Wan Chuck Woo (chuckwoo@kaeri.re.kr) Seongsu Lee (seongsulee@kaeri.re.kr) In-Hwan Oh (oh1905@kaeri.re.kr) Tae Joo Kim (tj@kaeri.re.kr) June Hyuk Lee (junelee@kaeri.re.kr) Young Soo Han (yshan@kaeri.re.kr) Man-Ho Kim (man-hokim@kist.kr) Eun Joo Shin (it-sej@kaeri.re.kr)