
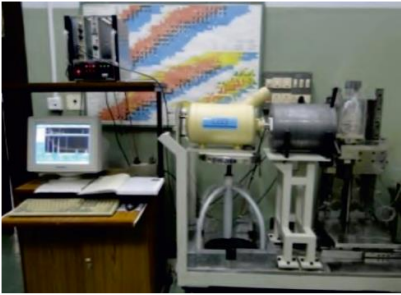



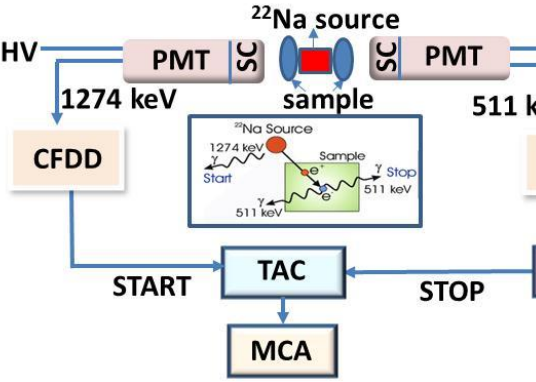



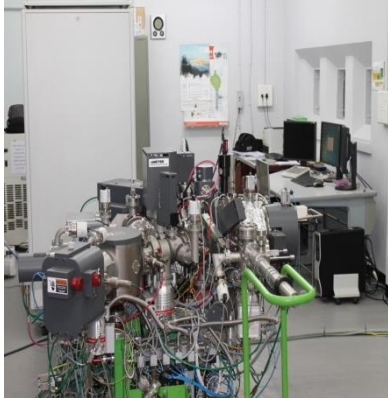
UGC DAE CSR Mumbai Centre at BARC:

Nuclear and Radioanalytical as well as Spectroscopic Facilities at RC&IG List of BARC facilities to be offered for Collaboration with Universities

SN.	Facility with location at BARC	Photo of facility	Areas of R&D work	Contact Scientist (Name /Affiliation/Email ID)
		Nuclear Analytical (NAA and PIGE) Facilities		
1	<p>Neutron Activation Analysis (NAA) facilities of RCD, RC&IG</p> <p>At RCD Labs at RLG and Dhruva Using PCF and Self-Serve facilities of Dhruva and Tray-rod facility of Apsara-U reactor</p>	<p>(a) Pneumatic Carrier Facility at Dhruva, BARC</p>   <p>Gamma-ray Spectrometry using HPGe detector</p>	<p>R&D work utilizing Chemical Characterization of Materials and Trace Elemental Determination in the fields of Material Sciences, Reactor Materials, Geology, Biology, Environment (soil, sediment, coal, coal ash etc), Food and Agriculture, Glass, Ceramics, Alloys, Archaeology and Forensic Sciences</p>	<p>Dr. R. Acharya Head, NA&ASS, Radiochemistry Division RC&IG, BARC Trombay, Mumbai-400085 Email: racharya@barc.gov.in</p> <p>Correspondence Through: Dr. P.K. Mohapatra Head, RCD, RC&IG, BARC Email: mpatra@barc.gov.in</p>

<p>2.</p>	<p>Particle Induced Gamma-ray Emission (PIGE) facilities of RCD at FOTIA (IADD), VDG, BARC using low energy (2-4MeV) proton beam and 10-50 nA current</p>	<p>(a) Conventional (in-vacuum chamber) PIGE facility</p>  <p>(b) External (in-air) PIGE facility</p> 	<p>Quantification of low Z elements (Li, B, F, Si, Al, P and Ti etc) in various samples relevant to Material Sciences, Reactor Materials, Geology, Biology, Environment, Food and Agriculture, Glass, Ceramics, Alloys, Archaeology and Forensic Sciences:</p>	<p>Dr. R. Acharya Head, NA&ASS, Radiochemistry Division RC&IG, BARC Trombay, Mumbai-400085 Email: racharya@barc.gov.in</p> <p>Correspondence Through: Dr. P.K. Mohapatra Head, RCD, RC&IG, BARC Email: mpatra@barc.gov.in</p>
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		<p align="center">Positron Annihilation Spectroscopy (PAS)</p>		
3.	DC-Positron beam facility, Radiochemistry Division, RLG		<p>Depth dependent Doppler broadening of annihilation radiation for (a) understanding radiation damage in heavy ion irradiation and accelerated ageing (b) Defect evolution in multilayers and thin films (c) Understanding pore interconnectivities in porous materials</p>	<p>Dr. Kathi Sudarshan Head, NPS, RCD, BARC, Mumabi-400085 Eamil: kathis@barc.gov.in</p> <p>Correspondence Through: Dr. P.K. Mohapatra Head, RCD, RC&IG, BARC Email: mpatra@barc.gov.in</p>
4	Positron annihilation lifetime spectrometer, Radiochemistry Division, RLG		<p>Positron lifetime measurement for (a) Free volume measurement in polymers, polymer nano composites (b) understanding defect evolution e.g. point defects etc. (c) Pore size determination in microporous materials</p>	<p>Dr. Kathi Sudarshan Head, NPS, RCD, BARC, Mumabi-400085 Eamil: kathis@barc.gov.in</p> <p>Correspondence Through: Dr. P.K. Mohapatra Head, RCD, RC&IG, BARC Email: mpatra@barc.gov.in</p>

Spectroscopic Facilities				
5.	<p>Electron Spin Resonance (ESR / EPR) Spectrometer At Radiochemistry Division, RC&IG, BARC</p>		<p>Spectroscopy, Material Chemistry</p>	<p>Dr. Manoj Mohapatra, RCD, BARC , Trombay, Mumbai-400085 Email: manojm@barc.gov.in</p> <p>Official Correspondence Through: Dr. P.K. Mohapatra Head, RCD, RC&IG, BARC Email: mpatra@barc.gov.in</p>
Mass Spectrometry - SIMS facility				
6.	<p>Magnetic sector based-Secondary Ion Mass Spectrometer (SIMS), Model-Cameca IMS-7F</p> <p>Lab C-12/C12-A/C-40 Mass Spectrometry Section, Fuel Chemistry Division, Radio Chemistry and Isotopic Group, Bhabha Atomic Research Centre, Trombay, Mumbai-400085.</p>		<p>1) Capability to analyze all the elements of the periodic table and associated molecular ions with detection limit in the range of ppb-ppt. 2) Surface (lateral resolution ~ 1 μm) and depth (depth resolution ~ 2-3 nm) distribution analysis of elemental and molecular species on solid samples (alloys, thin films, semiconductor etc.) 2) Isotopic composition analysis of elements in solid, liquid and powder samples.</p>	<p>Contact Scientist details</p> <p>1) Vijay Karki Fuel Chemistry Division, Bhabha Atomic Research Centre, Mumbai-400085, Email-vkarki@barc.gov.in</p> <p>2) Dr. P.G. Jaison Head, Mass Spectrometry Section, Fuel Chemistry Division, Bhabha Atomic Research Centre, Mumbai - 400085 Email: jaipg@barc.gov.in</p>

			<p>3) Quantitative depth distribution analysis of elements in alloys, thin films, semiconductors etc. (provided one certified matrix matched reference sample is available) .</p> <p>4) Corrosion, diffusion studies and determination of size of precipitates & Grain boundary corrosion phenomenon.</p> <p>6) Mass spectrum analysis up to 500 amu.</p>	<p>Head of the Division Details Dr. S. Chaudhury, Head, Fuel Chemistry Division, Bhabha Atomic Research Centre, Mumbai- 400085, Email: saty@barc.gov.in</p>
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