

## Biodata

Name	Arbind Kumar	
Designation	Scientist F & Head, Refractory Metals Division, Project Manager, Hafnium Plant	
Educational qualification	B.E. Metallurgical Engg. from BIT Sindri, Jharkhand M.Tech. by Research in Mineral Engg. From IIT (ISM), Dhanbad Advanced Diploma in Management from IGNOU, New Delhi Diploma in Operation Management from IGNOU, New Delhi	
Research area	<p>Mineral processing, Non-ferrous extractive metallurgy, metal purification and powder metallurgy including ore comminution, ore dissolution, solvent extraction, bioleaching, calcinations, carbo-chlorination, crystallization, chemical and electro-refining, high temp. and high vacuum processing like hydriding-dehydriding, vacuum distillation and vacuum refining, zone refining, high temperature sodium reduction, hydrogen reduction, magnesium reduction, alumino-thermic reduction, vacuum sintering, powder metallurgy. Project Management, process system design, infrastructure development, Safety (personnel &amp; plant) systems, technology transfer for lab scale and pilot plant scale operations.</p> <ol style="list-style-type: none"> <li>1. Non-ferrous Extractive Metallurgy &amp; powder metallurgy of Refractory &amp; Reactive metals viz. Tantalum, Niobium, Hafnium, Zirconium upto pilot plant level</li> <li>2. Purification of metals viz. Gold, silver, Indium, Tellurium, Mercury to high purity (5N-6N) levels for Electronics applications</li> <li>3. Preparation of solder powder by Atomization process</li> <li>4. Recycling of Electronic Waste (E-waste)</li> </ol>	
Recognised Awards/Honors/Fellow	<ol style="list-style-type: none"> <li>1. Indian Chemical Council Award (ICC 2014) for Excellence in Chemical plant Design and Engineering for Hafnium Plant</li> <li>2. Bio-data Published in Asian/American Who's who Volume Fourth (2005), Compiling editor Ravi Bhushan, published by Rifacimento International, New Delhi</li> <li>3. Conferred with Honorary Appointment to The Research Board of Advisors of AMERICAN BIOGRAPHICAL INSTITUTE (ABI) and Member of ABI since 2005</li> <li>4. Life Member of Institution of engineers (India), IIM, PMAI, MRSI, IChE, IIME and E-member of TMS (USA)</li> </ol>	

<p>Projects</p>	<p>On-going Projects :</p> <ol style="list-style-type: none"> <li>1. Processing and Supply of Hafnium Sponge (HD/TS/001) (01-07-2016 to 05-11-2020) – (Project Outlay Rs.630.73 lakhs) sponsored by VSSC (ISRO, Dept. of Space)–Chief Investigator (C I)</li> <li>2. Purification of Hafnium metal sponge using Electron Beam melting and preparation of hafnium metal targets for electronic applications – India-Bulgaria Inter-governmental Programme of cooperation in Science and Technology – Co-Investigator)</li> </ol> <p>Completed Projects :</p> <ol style="list-style-type: none"> <li>1. Development of Solder Powders for Solder Paste application (1993 to 1997) sponsored by MeitY – Co-Investigator.</li> <li>2. Technology Mission Project “Development of Capacitor grade Tantalum Powder &amp; Lead Wires” (April, 1996 to March, 2003) – (Project Outlay Rs.2.07 crores) sponsored by MeitY -- Chief Investigator (C I)</li> <li>3. Development of Niobium &amp; Hafnium metal for NIOBHAT 101 alloy for Space Applications (January, 2004 to July, 2006) – (Project Outlay Rs.24.80 lakhs) Sponsored by VSSC (ISRO) – C I</li> <li>4. Pre-production studies on niobium and hafnium for establishment of production plant (November, 2006 to February, 2010) – (Project Outlay Rs.154.94 lakhs) sponsored by VSSC (ISRO)-- C I</li> <li>5. Environmentally Sound Methods for Recovery of Metals from Printed Circuit Boards (2010 to 2013) – (Project Outlay Rs.2.07 crores) sponsored by MeitY -- Co-C I.</li> <li>6. Establishment of Extended pilot plant facility for preparation of 320 kg per annum hafnium sponge (January, 2010 to June 2016) – (Project Outlay Rs.25.91 crores) sponsored by VSSC (ISRO) – C I</li> <li>7. Environmentally Sound Methods for Recovery of Metals from Printed Circuit Boards (Phase-II) (August, 2014 to March, 2020) – (Project outlay Rs.11.86 crores) sponsored by MeitY – Co-Investigator (upto 2017)</li> </ol>
<p>Publications/Patents (Past 5 years)</p>	<p><b>Book Chapters :</b> Synthesis and characterization of Nano-materials, edited by V.Rajendran et.al., Publisher Bloomsbury ISBN 978-93-85436-76-5, B. Shiva, Raghu C Reddy, K Sri Gowri, S Devaki Rani, K Srinivasa Vadayar, <b>Arbind Kumar</b> and N R Munirathnam</p> <p>Key Note Address -2, Invited Talks -9</p>