

# Pelletizing –Technology for Generation Next !!!

By **Mr.Suresh Bhatia**  
VT-Corp, Manager Marketing



India's exports have doubled since 2000 and increased by almost 43% in 2004 with a large proportion of this increase going to the Chinese spot market.

It is highly profitable to export pellets instead of lumps and fines. However in India contribution of pellets to total exports is quite minimal.

We at VT CORP has vision of making India shining on the global map as an "Technological Advanced Country". This seems to true as Indian

Pelletizing is the process of converting Iron Ore Fines into "Uniformed Sized Iron Ore Pellets" that can be charged into the blast furnaces or for Production of Direct Reduced Iron (DRI). Pellets are uniform size, with purity of 63%-68% contributing to faster reduction and high metallization rates. Pellets with their high, uniform mechanical strength and high abrasive strength increase production of sponge iron by 25% to 30% with same amount of fuel.

Pelletizing of iron ore has always been looked upon as huge investments project by Indian Mines owners & investors, this fact unknowly compel them to export the fines

generated at throw away prices. Iron ore mines being the natural resources have being under utilized & wasted which is very well reflected by the figures shown below.

Type	Quantity Exported (in million tonnes)	
	2003-04	2004-05
Iron Ore Pellets	2.47	5.09
% of pellets of total exports	5%	7%
Iron Ore Lumps (Variety 1)	10.87	19.30
Iron Ore Lumps (Variety 2)	0.96	1.95
Iron Ore Fines( Variety 1)	31.40	44.50
Iron Ore Fines (Variety 2)	2.64	4.32
Total Iron Ore export	48.33	75.16

(Data Source:EXIM data Ministry of Commerce)

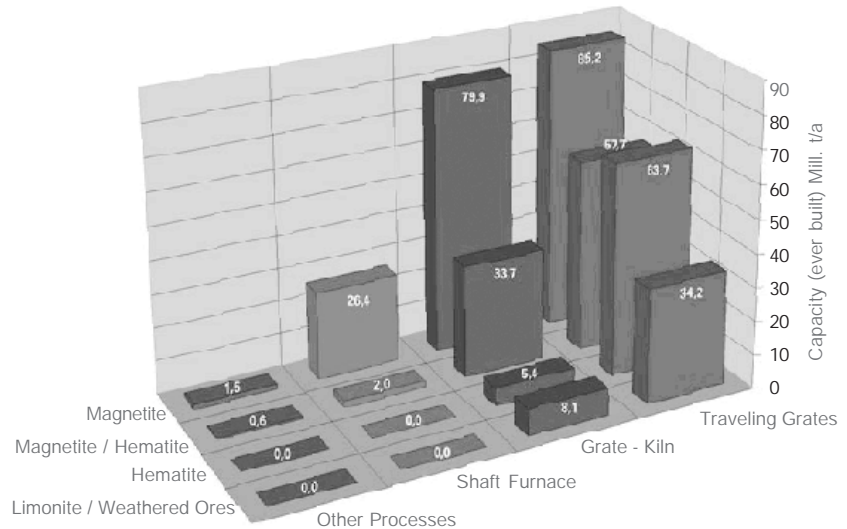
Intelligence is accepted worldwide & now India has been looked upon as Intellectual capital & cost competency. Be in software, engineering, Research or Technology, Indians have made their mark. MNCs are choosing India as their first choice for R&D hubs.

To capitalise on our Intellectual strengths we have innovated a proven Straight Travelling grate technology for Pelletizing Iron Ore fines available in Indian at affordable prices.

The cheapest Pelletizing Plant with Grate Kiln technology are available which are better with Magnetite as the Iron Ore, but in India Hematite is abundantly available & has reservoir of 9,919 million tonnes Hematite and 3,516 million tonnes of Magnetite. Straight Traveling Grate Technology is better with Hematite as the iron ore & can also with Magnetite & other iron ore.

Today all the pelletizing plants in India are working on Straight Travelling grate technology & it will be comparatively more easy to get professionals expertise.

VT CORP has core competency of manufacturing Kiln burners which forms the heart of the indurating furnace with Straight grate technology which ensure consistent heat flow & distribution across which results in better product quality. Moreover the investment cost for producing are very less there by paybacks in just less than 1.5 year.



Straight traveling grate technology has numerous benefits as compared to Grate kiln :

STRAIGHT TRAVELING GRATE INDURATING FURNACE	ROTARY GRATE KILN
<p>Suited for hematite and magnetite ores.</p> <ul style="list-style-type: none"> <li>□ Drying, Preheating, Induration, Cooling Cycle are carried out in a single unit.</li> <li>□ Generation of fines is a bare minimum, as there is no transfer of material.</li> <li>□ No ring formation/ accretion in the system.</li> <li>□ Power and fuel consumption lower</li> <li>□ Efficient thermal process</li> <li>□ Waste heat recovery system, a feature of process.</li> <li>□ Low maintenance</li> <li>□ Larger no. of installations over the world. Particularly all plants of India are based on this technology.</li> <li>□ Refractory life is longer because refractory lined hood is stationary and at constant temperature.</li> <li>□ Modular design of traveling grate allows removal and replacement of single pellet in about 5 minutes while process temperatures are maintained.</li> <li>□ Lower dust loading in the gas handling system.</li> </ul>	<ul style="list-style-type: none"> <li>□ Preferably suited for magnetite ores.</li> <li>□ Drying, preheating, Induration, Cooling cycles are carried out in different units.</li> <li>□ Many transfer points hence heavy generation of fines.</li> <li>□ Fines create accretion problems and affect the productivity.</li> <li>□ Power and fuel consumption higher because of seal leakage.</li> <li>□ Less efficient thermal process</li> <li>□ Difficult waste heat recovery system</li> <li>□ High maintenance</li> <li>□ Less plants installed Internationally</li> <li>□ Higher wear of refractories because kiln refractories are subjected to thermal cycling each revolution &amp; abrasion from pellets.</li> <li>□ All repairs of the grate component occurs " off line " The complex chain grate in the grate kiln process must be shut down &amp; cooled for maintenance.</li> <li>□ Higher dust loading in the gas handling system.∅</li> </ul>
<ul style="list-style-type: none"> <li>□ Several burners in preheating and firing zones:                             <ul style="list-style-type: none"> <li>• Superior process flexibility.</li> <li>• Adjustable temperature profile.</li> <li>• Adaptation of different firing profiles to changing raw materials.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>□ Single Burner in Rotary Kiln. Low Flexibility.</li> </ul>