**Cover letter**

This is to certify that the research work titled **“Bulk Raw Materials Handling and Blending Techniques of Sinter Plant: A Case Study of Ajaokuta Steel Company Limited, Kogi State, Nigeria**

**Cyril Ocheri1, Hebert. A. Obiorah1, Romanus Egwuonwu Njoku1, Nnaemeka Anthony Urama, 1 Joseph Babalola Agboola, 2 Christopher Nwankwo Mbah, 3. Johnson Nwaemezie Ezeanyanwu,3 Chikezie Walter Onyia3.**

cyril.ocheri@unn.edu.ng , obioraherberta@gmail.com, romanus.njoku@unn.edu.ng,

nnaemeka.urama@unn.edu.ng, joe\_agboola@yahoo.com , christopher.mbah@esut.edu.ng, johnson.ezeanyanwu@esut.edu.ng , chikezieonyia@gmail.com

1Department. of Metallurgical and Materials Engineering, University of Nigeria, Nsukka

2Department of Metallurgical and Materials Engineering, Federal University of Technology, Minna, Niger State

3 Department of Metallurgical and Materials Engineering, Enugu State University of Science and Technology, Enugu

Corresponding Author is Ocheri C.

E-mail: cyril.ocheri@unn.edu.ng

Phone: +2348051793922

**Contributions by the Authors**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| S/No | Name | Email | Affiliation  | University  | Percentage (100%) of Contributions  | Corresponding Author  |
| 1 | Cyril Ocheri1 | cyril.ocheri@unn.edu.ng  | Department of Metallurgical and Materials Engineering  | University of Nigeria, Nsukka. Enugu State | 85 |  Ocheri C.cyril.ocheri@unn.edu.ng Phone: +2348051793922 |
| 2 | Hebert. A. Obiorah1 | obioraherberta@gmail.com | Department of Metallurgical and Materials Engineering  | University of Nigeria, Nsukka. Enugu State | 70 |   |
| 3 | Romanus Egwuonwu Njoku1 | romanus.njoku@unn.edu.ng  | Department of Metallurgical and Materials Engineering  | University of Nigeria, Nsukka, Enugu State | 74 |   |
| 4 | Nnaemeka Anthony Urama1  | nnaemeka.urama@unn.edu.ng  | Department of Metallurgical and Materials Engineering  | University of Nigeria, Nsukka, Enugu State  | 78 |   |
| 5 | Joseph Babalola Agboola2  | joe\_agboola@yahoo.com  | Department of Metallurgical and Materials Engineering | Federal University of Technology , Minna , Niger State | 78 |   |
|  6 | Christopher Nwankwo Mbah 3 | christopher. mbah@esut.edu.ng  | Department of Metallurgical and Materials Engineering  | Enugu State University of Science and Technology , ESUT, Enugu State  | 79 |   |
|  7 | Johnson Nwaemezie Ezeanyanwu3  | johnson.ezeanyanwu@esut.edu.ng  | Department of Metallurgical and Materials Engineering  | Enugu State University of Science and Technology , ESUT, Enugu State  | 75 |   |
| 8 | Chikezie Water Onyia  | chikeziewonyia@gmail.com  | Department of Metallurgical and Materials Engineering  | Enugu State University of Science and Technology , ESUT, Enugu State  | 72 |   |

**The novelty and importance of the research has to do with the** Bulk raw materials handling plant and sintering plant preparatory plants which are established to receive, blend, stockpile, prepare and supply specified grades of raw materials for smooth operations of iron making plant (Blast furnace), steel making plant (Basic oxygen converter) and lime Plant(calcinations plant).The research work highlighted the bulk raw materials handling units of the Ajaokuta Steel Company Limited and some general problem of scientific analysis and documentation of basic equipment details, stockyard facilities, bulk materials transport systems and sinter processes. The research also discusses the general knowledge and operational procedures of these plants for effective and efficient operational processes for optical results. The needed bulk raw materials like Iron ore concentrate that are supplied from the mines to some extent have fluctuated chemical compositions as a result of the nature of the deposit with various factors controlling beneficiation processes and addition of metal-bearing materials collected as a waste product from the Rolling Mills, Blast Furnace and Sinter Plant which must be recycled through Iron ore concentrate stockyard. The part of the sinter mixture is melted at a temperature about 1300-1480 ° C and a sequence of reactions shaping the sinter cake to be loaded into the blast furnace to produce iron from a pig. Conclusion and recommendations were also presented to assist the operators of these plants to achieve the needed results.

The research work has not been sent to any journal for consideration neither in part nor in whole. The authors therefore take the responsibility of all the content in the paper and wish that your journal publishes the paper on our behalf.

Thanks



Ocheri Cyril

Corresponding Author