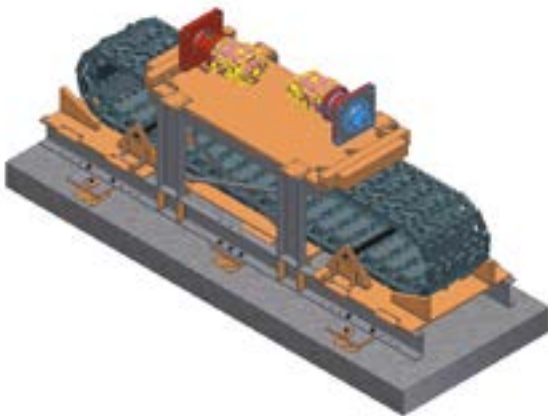


## Lean manufacturing techniques optimization in redesigning test-bench chain to withstand high torque during operation

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The crawler chains of underground continuous miners transfer the torque induced by traction reducers to the ground. The translation of circular motion to lateral motion enables the Continuous Miner to move forward or backwards. However, the crawler chain is unfortunately too bulky for use at the test bench for testing purposes as there is a human interface in assembling and disassembling of the chain. Therefore, research had to be done to investigate other alternative materials that could be used to mould the crawler chain. The material must be light in weight and be able to handle the large torque values or alternatively re-design the chain to a lighter one. The aim is to reduce 50% of the weight of a single link. Investigation and exhaustive research will be conducted in fabricating the new designs of the chain as well as considering the cost effectiveness of the manufacture of the chain to be used. The analysis is to check if the new designed test bench chain can handle the high torques generated during operation.



**Figure 1:** Shows the test bench chain configuration system



**Figure 2:** Describe the traction reducer test bench fully assembled

### Recent Publications

- Bolarinwa G O, Aniki A O, Farounbi J A, Aduloju S C (2015) The effects of iron-ore tailings on setting times of some commercial cement. *Scholars Journal of Engineering and Technology*. 3(1A):14-20.
- Bolarinwa G O, Aniki A O, Aduloju S C (2015) Investigation of compressive strength of concrete from cement and iron-ore tailings mixture. *Scholars Journal of Engineering and Technology*. 3(5A):560-562.

### Biography

Abimbola O Aniki graduated in 2002 from University of Ilorin, Nigeria (Mechanical Engineering, Production/Maintenance option) worked with Lafarge Cement Nigeria as Inspection Engineer, Methods Department. He had his Master's Degree at University of Johannesburg, South Africa from Department of Mechanical Engineering. He is currently lecturing at Vaal University of Technology, South Africa. He has several conferences and journals focusing on Maintenance field and has contributed greatly on the big project at Lafarge Cement which titled K1MR- Kiln 1 Major Repair. In his present job, apart from been a Lecturer, is also an examiner, moderator and a visitor WIL student (Work Integrated Learning) at various companies. He is a Researcher and is pursuing PhD Degree.

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