

Review Form 3

Journal Name:	Journal of Materials Science Research and Reviews
Manuscript Number:	Ms_JMSRR_124216
Title of the Manuscript:	Mechanical Properties of Heat-treated (Full Annealing) Compacted Graphite Cast Iron (CGI) of Varying Microstructures Suitable for Automotives Application
Type of the Article	Journal Paper

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PART 1: Review Comments

Compulsory REVISION comments	Reviewer's comment	Author's Feedback <i>(Please correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)</i>
Please write a few sentences regarding the importance of this manuscript for the scientific community. Why do you like (or dislike) this manuscript? A minimum of 3-4 sentences may be required for this part.	The manuscript delves into the mechanical properties of fully annealed CGI. The characterization and mechanical tests carried out is commendable but the analysis lacks depth. The article doesn't necessarily add new knowledge to the topic of mechanical properties of CGI. The authors list number of references in introduction but they neither clearly state their objective for conducting this study nor mention the research gap they are trying to address.	
Is the title of the article suitable? (If not please suggest an alternative title)	The title can be changed to: Microstructure and Mechanical Properties of Fully Annealed Compacted Graphite Cast Iron for Automotive Applications	
Is the abstract of the article comprehensive? Do you suggest the addition (or deletion) of some points in this section? Please write your suggestions here.	Abstract is comprehensive, few details like compositions, heat treatment cycles can be omitted as they are discussed in detail subsequently. Mentioning "austenized at 920C" should be sufficient instead of mentioning the whole cycle. The results obtained can be rephrased to be concise and clear.	
Are subsections and structure of the manuscript appropriate?	No. the subsections are mis numbered and haphazard making it extremely difficult to read. The formatting of the document is non-uniform which adds to the difficulty in reading. The figures and tables are not labelled or aligned correctly, standard scale bars are missing in the images.	
Please write a few sentences regarding the scientific correctness of this manuscript. Why do you think that this manuscript is scientifically robust and technically sound? A minimum of 3-4 sentences may be required for this part.	The source of samples is not mentioned, they are just labelled A1 to A6 without any prior explanation as to why they are different to begin with. ASTM standard is not mentioned for tensile testing and the testing procedure itself is not clear. The language used to mention failure of specimen is very colloquial and not fit for a technical manuscript. The images do not depict the microstructural changes the authors want to convey. The explanation provided for the variation in ductility is not sufficient, fractography studies can be included to further explore the failure mechanism. The ductility percentages mentioned seem to be incorrect as they are exceeding 200%, authors have to revisit the results or the methods of calculation. The article doesn't seem to be scientifically sound or coherent.	
Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.	NA	
<u>Minor</u> REVISION comments Is the language/English quality of the article suitable for scholarly communications?	No, the language and grammar in the manuscript has to be seriously improved as many irrelevant and incorrect words have been used in multiple places that change meaning of the whole sentence.	
<u>Optional/General</u> comments	The article merely seems to report findings for a set of experiments without a clear objective. The authors have to provide clear justification for conducting the study, origin of the samples, changes in samples before and after heat treatment. Additionally, images of the samples, drawings of sample geometry used for testing (according to ASTM), graphs of heat treatment cycles have to be included. All graphs have to be revised in Origin software and scalebars have to be added in images. Etched sample images can be included to clearly differentiate between phases before and after heat treatment.	

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PART 2:

	Reviewer's comment	Author's comment <i>(if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)</i>
Are there ethical issues in this manuscript?	<i>(If yes, Kindly please write down the ethical issues here in details)</i>	

Reviewer Details:

Name:	Shreyas N Harithsa
Department, University & Country	IIT Madras, India