



**SDI Review Form 1.5**

**PART A:**

Journal Name:	<a href="#">Physical Review &amp; Research International</a>
Manuscript Number:	<b>MS: 2012/PRRI/1474</b>
Title of the Manuscript:	<b><i>Predicting the Time Dependent Deformation of Viscoelastic Materials Using a Gompertz-type Model</i></b>
Manuscript received on (Date)	
Review comment submitted (Date)	



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### PART B: Review Comments

	Reviewer's comment	Author's comment (if agreed with reviewer, correct the manuscript and highlight that part and write here 'Corrected'/ if not agreed, give suitable justifications)
<b>General comment:</b>	<p>The one- dimensional nonlinear rheological mathematical model by using the stress decomposition theory is developed in order to predict the time versus deformation variation as a Gompertz-type growth function.</p> <p>The proposed approach is interesting to represent any asymmetric S-shaped experimental data. It should be very interesting to compare the numerical and the experimental results proposed in the literature.</p> <p>The slope justifies the developed nonlinear model at the first intervals time of different curves. This fact is not proved for the lows values of the viscoelastic parameters.</p> <p>According to my point of view, the author must answer point by point to the questions proposed below and resubmit the paper.</p>	Corrected
<b>Specific comments:</b>	<p>1. Line 8: the keyword "logarithmic elastic force function" is very long, please correct.</p> <p>2. Please posted the different parameters on the figures 1, 5 and 6</p>	Corrected
Title and abstract	The abstract is concise, informative and not exceed 300 words in length. But, the techniques methods used, major findings with important data and major conclusions must be specified.	Corrected
Introduction	The proposed work is well described in the literature. Some sentences are too long, please correct this fact for more comprehension: line 87 to 92; line 117 to 122...	Corrected
Review of literature (Heading may differ in the case of review paper)	<p>The literature review is very interesting. But I note a lot off own citations in the reference list. About the developed purpose The authors must investigate other references in the literature.</p> <p>For instance, in the case of viscoelastic linear formulation (line 33-35) please it interesting to illustrate some works as: Chazal, C., Moutou Pitti, R. (2011) Incremental constitutive formulation for time dependent</p>	Corrected



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	materials: creep integral approach. Mech Time-Depend Mater, 15, 239-253. DOI: 10.1007/s11043-011-9135-z. ...	
Materials & methods (Heading may differ in the case of review paper)	<p>1. Line 149: please underline that the equation (3) is also justified if <math>\varepsilon_0 &gt; \sqrt{\varepsilon}</math>. I think that this condition is in accordance of the results posted in figures 2, 3 and 4.</p> <p>2. The legends posted in the figures 1 to 6 are not clear, please correct and add the units on all graphics.</p> <p>3. Even if the paper proposes the nonlinear approach (Gompertz-type growth function), the strain results are represent versus time; what the Kelvin Voigt model is not posted in the text?</p>	Corrected
Results & discussion (Heading may differ in the case of review paper)	<p>2. I don't see the real different of figures 5 and 6 according to the parameters sensitivity in the non-linear time dependent effect. If the magnitude <math>w_0 = 1</math> in the figure 6, what is this value in figure 5?</p> <p>3. According to the figure 4 it shows that the nonlinear viscoelastic effects are traduced of the value of <math>w_0 = 0.5</math>. What this value is different in the case of figure 6?</p> <p>4. According to the different results posted in the figures 2, 3 and 4, it shown that the increasing values of the parameters <math>\lambda</math>, <math>w_0</math>, <math>\varepsilon_0</math> increase also the nonlinear viscoelastic sensitivity. Please underline this important conclusion in the conclusion.</p> <p>5. As demonstrated in lines 323 to 325 function <math>\varphi</math> behaves linear for small values of deformation; if we must proposed an rheological model, what should be the instantaneous shape of the spring?</p>	Corrected
Conclusion	The conclusion is very succinct but the major findings of the study must be recalled, see the section above.	Corrected
References	OK. In general, the references are in the accordance of the scope of the journal.	Corrected