



SDI Review Form 1.6

Journal Name:	British Journal of Applied Science & Technology
Manuscript Number:	2014_BJAST_10680
Title of the Manuscript:	A Survey on Elliptic Filters
Type of the Article	Review Article

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This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty**', provided the manuscript is scientifically robust and technically sound.

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PART 1: Review Comments

	Reviewer's comment	Author's comment (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)
Compulsory REVISION comments	It should be explained in text following formula (4) that N is determined from the parameters (omegas and epsilons) by equation (14) (conjointly with the discussion that precedes it). The rationality of the transfer function is not made explicit until later in text (formulas (31) and (36)). There should be a comment in Section 2.1 that the order parameter N relates to those formulas. Only then the parameter N will have a clear meaning. Also, the formulas in question descend from the formula for J_N at the bottom of page 11, following the analysis of zeros and poles of J_N. It would enhance the clarity of text if this part of the material was given its own headline, e.g. as subsection 2.3 Rationality of the Jacobian elliptic function. Also, the material around formulas (31) and (36) may deserve	I added a line after formula (4) with the appropriate content and I referred to the Equation (14) and the associated section using labels (note that due to the journal style file the equation numbering has changed and in the following comments I am referring to the old paper version sent for review). In response to this comment, I added a small paragraph at the end of the Section 2 that says this, and since this is a review/lecture paper I added also a short description regarding the polynomial and rational filter approximations. I totally agree with this comment and I adopted it for the case of the Jacobian function. However this is too difficult to be done for the case of the transfer function since it is not compatible with the logical paper organization that treats separately the

	a separate subsection headline “Rationality of the transfer function” The definition of A_p and A_s and their relation to epsilons is not very clear as given in the preamble to Section 2. A much more clear explanation could be given by a referring to Figure 6. Note that the ripple amplitudes (epsilons) can be given a precise meaning only after the A’s have already been defined. In fact, it may be beneficial to move material from subsection 2.4 to the preamble of Section 2. Equation 37.5 is not correct (there is no omega there). It	cases N = odd and N = even. In the current paper version the poles and zeros for N = odd are identified, and then the rational transfer function is derived, while a similar approach is followed for the case N = even. Therefore, if I add a subsection “Rationality of the transfer function” it should be done twice for N=odd and N=even. The only way to do this correctly, is to estimate the poles and zeros for N=odd AND N=even in the same subsection and in the next subsection named “Rationality of the transfer function” to derive the transfer function for the two cases and to put the equations (31) and (36) one after the other. I prefer to keep the current paper structure but of course if you think that it is important, I will adopt your comment in the next revision of the paper. These definitions are related with the general case while the definition of Ap and As for the case of the elliptic filters are given at the bottom of page 4. What I did was to add a reference to Figure 6 and to the section 2.5. I hope this is enough.
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	should be replaced by (39). Also, it ought to be considered if the definition of selectivity is necessary at all --- it does not seem to be used elsewhere in the article. In summary, subsection 2.4 ought to be thoroughly revised and perhaps merged with text at the beginning of Section 2.	After a careful judgment I decided to remove completely the section 2.5 since it does not actually used elsewhere in the article and it was added just for sake of completeness. After all, the parameters defined there are too specialised and they are omitted in almost all books regarding filter approximations. Furthermore, most of the equations appear is section have been derived by hand and there is no guarantee that is correct (the equation 37 it seems really to be erroneous).
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<u>Minor</u> REVISION comments	'of' should be 'or' in line 12 of page 3 Kappa and k are confused in some places – the bottom of page 20 and the top of page 9 Parenthetical remark at the bottom of page 8: should state: J_N assumes values in $[-1, 1]$ Bottom of page 18 formula missing the symbol H Incorrect formula for k' in point 3 on page 23 There is a typo on point 4 on page 23 (estimated) Formula for μ on page 24 needs to be corrected	ALL THESE TYPOS AND MISTAKES HAVE BEEN CORRECTED ACCORDINGLY
<u>Optional/General</u> comments	The title would be more accurate in the form: “A survey on the design of analog lowpass elliptic filters” according to the clause included at the end of Section 1. Perhaps the subsection 2.6 should open with a brief comment as to the importance of the phase response characteristic in signal processing. Would an appendix containing a brief compendium of the elliptic function and theta function formulas that were used in the survey (and only those) be a good idea? Further references could be given for books that contain a detailed derivation of these formulas. This is truly	This remark is correct, and I changed the title. My initial idea was to describe the design of all elliptic filter (with the emphasis to low pass and the derivation of the other types via frequency transformations) but the paper was too lengthy and I did not do this. A small explanatory section with the required information has been added at the beginning of subsection 2.6 Such an appendix was available since the paper writing, but I did not added it, due to the large paper size. Because I completely agree with the existence of this appendix I will add it with a cost of 5-6 more pages.



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	optional, but ought to be considered. The last sentences in the Conclusions sound defensive, and could be omitted. However, in spite of what is stated there, a brief compendium of relevant formulas could be useful.	I removed this sentence and I changed the conclusions accordingly (I decided to add the appendix for elliptic functions) and I added a sentence to the conclusion that says this. Furthermore I formatted the paper according to the journal latex style file and I formatted the bibliography section correctly. THANKS FOR YOUR VALUABLE REVIEW!!! It really added to the paper more value
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