

How using the wrong camera fucks up a project

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Abstract

Thou should not use thermal camera (Maybe something more scientific)

1. INTRODUCTION

Although there have been several studies, which have dealt with the occurrences within the capillary network, this area is not completely investigated. Especially not the phenomena of the oscillating changes of the vessel diameter of the capillaries. This phenomena, called vasomotion, which occurs in the microcirculatory system is an auto-regulation mechanism that optimizes blood distribution within the microcirculatory system. With better knowledge about the occurrences during vasomotion, it is possible to improve the treatment of intensive care patients. Particularly for sepsis patients, which are in a high risk of multi organ failure, might be the chance to prevent multi organ failure due to a lack of supply through the microcirculatory system in the organs.

Previous studies detected that the vasomotric blood flow is quantifiable as temperature micro oscillations in the frequency range of $0,005 - 0,05Hz$. Based on this, it must be possible to detect a difference in the mean spectrum temperature oscillations in the microcirculatory system, depending on the blood flow in the macro-circulatory system. Therefore a study of vasomotion in the peripheral circulation with infrared thermography is implemented. Thereby the temperature oscillations in the skin, which are used as an indicator for peripheral circulation, are measured by infrared imaging. The aim of this study was to investigate if there are changes in the vasomotric blood flow caused by partial occlusion of the blood supply. The restriction of the blood supply causes an ischemia, which leads to a lack of oxygen. This is used to image one effect of sepsis. This study lays the foundation for further experiments to elaborate the relationship between the pathological changes in the cardiovascular system and the microcirculation to draw conclusions out of the vasomotric blood flow to improve the treatment of patients with sepsis.

2. Method

2.1. Subjects

Four healthy subjects with age between 22 and 52 years (average age 30.5), three men and one female were recruited for this experiment. No subjects consumed caffeine or alcoholic beverages before experiment. All subject met inclusion and exclusion criteria and fully understood what the study involved.

2.2. Test setting

Subjects was placed in an upholstered adjustable dentist chair which allowed a comfortable sitting position. The hand placed on the armrest which had a vacuum pillow mounted for stability and a microfiber tissue for emissivity contrast. $37,5 \pm 1,0$ cm over the hand the Xenics Gobi 640 $17\mu m$ GigE infrared camera is positioned with a tripod. The setup with camera, chair and computer can be seen on



Figure 1. Inductance of oscillation winding on amorphous magnetic core versus DC bias magnetic field

2.3. Data acquisition

2.4. Data processing

2.5. Statistical analysis

3. MATH

Before you begin to format your paper, first write and save the content as a separate text file. Keep your text and graphic files separate until after the text has been formatted and styled. Do not use hard tabs, and limit use of hard returns to only one return at the end of a paragraph. Do not add any kind of pagination anywhere in the paper. Do not number text heads—the template will do that for you.

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Define abbreviations and acronyms the first time they are used in the text, even after they have been defined in the abstract. Abbreviations such as IEEE, SI, MKS, CGS, sc, dc, and rms do not have to be defined. Do not use abbreviations in the title or heads unless they are unavoidable.

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- Use either SI (MKS) or CGS as primary units. (SI units are encouraged.) English units may be used as secondary units (in parentheses). An exception would be the use of English units as identifiers in trade, such as 3.5-inch disk drive.
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- Use a zero before decimal points: 0.25, not .25. Use cm³, not cc. (bullet list)

3.3. Equations

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$$\alpha + \beta = \chi \quad (1)$$

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3.4. Some Common Mistakes

- The word data is plural, not singular.
- The subscript for the permeability of vacuum μ_0 , and other common scientific constants, is zero with subscript formatting, not a lowercase letter o.
- In American English, commas, semi-/colons, periods, question and exclamation marks are located within quotation marks only when a complete thought or name is cited, such as a title or full quotation. When quotation marks are used, instead of a bold or italic typeface, to highlight a word or phrase, punctuation should appear outside of the quotation marks. A parenthetical phrase or statement at the end of a sentence is punctuated outside of the closing parenthesis (like this). (A parenthetical sentence is punctuated within the parentheses.)
- A graph within a graph is an inset, not an insert. The word *alternately* is preferred to the word *alternately* (unless you really mean something that alternates).
- Do not use the word *essentially* to mean *approximately* or *effectively*.

- In your paper title, if the words that uses can accurately replace the word using, capitalize the u; if not, keep using lower-cased.
- Be aware of the different meanings of the homophones affect and effect, complement and compliment, discreet and discrete, principal and principle.
- Do not confuse imply and infer.
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- There is no period after the et in the Latin abbreviation et al..
- The abbreviation i.e. means that is, and the abbreviation e.g. means for example.

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Text heads organize the topics on a relational, hierarchical basis. For example, the paper title is the primary text head because all subsequent material relates and elaborates on this one topic. If there are two or more sub-topics, the next level head (uppercase Roman numerals) should be used and, conversely, if there are not at least two sub-topics, then no subheads should be introduced. Styles named Heading 1, Heading 2, Heading 3, and Heading 4 are prescribed.

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Positioning Figures and Tables: Place figures and tables at the top and bottom of columns. Avoid placing them in the middle of columns. Large figures and tables

may span across both columns. Figure captions should be below the figures; table heads should appear above the tables. Insert figures and tables after they are cited in the text. Use the abbreviation Fig. 1, even at the beginning of a sentence.

Table 1. An Example of a Table

One	Two
Three	Four

We suggest that you use a text box to insert a graphic (which is ideally a 300 dpi TIFF or EPS file, with all fonts embedded) because, in an document, this method is somewhat more stable than directly inserting a picture.

Figure 2. Inductance of oscillation winding on amorphous magnetic core versus DC bias magnetic field

Figure Labels: Use 8 point Times New Roman for Figure labels. Use words rather than symbols or abbreviations when writing Figure axis labels to avoid confusing the reader. As an example, write the quantity Magnetization, or Magnetization, M, not just M. If including units in the label, present them within parentheses. Do not label axes only with units. In the example, write Magnetization (A/m) or Magnetization A[m(1)], not just A/m. Do not label axes with a ratio of quantities and units. For example, write Temperature (K), not Temperature/K.

5. CONCLUSIONS

A conclusion section is not required. Although a conclusion may review the main points of the paper, do not replicate the abstract as the conclusion. A conclusion might elaborate on the importance of the work or suggest applications and extensions.

APPENDIX

Appendixes should appear before the acknowledgment.

ACKNOWLEDGMENT

The preferred spelling of the word acknowledgment in America is without an e after the g. Avoid the stilted expression, One of us (R. B. G.) thanks . . .

Instead, try R. B. G. thanks. Put sponsor acknowledgments in the unnumbered footnote on the first page.

References are important to the reader; therefore, each citation must be complete and correct. If at all possible, references should be commonly available publications.

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