A Manuscript Microscope 'Sentence Audit' of:

Label free sensing with Terahertz multiple ring resonators

What is the Manuscript Microscope Sentence Audit?

The Manuscript Microscope Sentence Audit is a research paper introspection system that parses the text of your manuscript into minimal sentence components for faster, more accurate, enhanced proofreading.

Why use a Sentence Audit to proofread your manuscript?

- Accelerated Proofreading: Examine long technical texts in a fraction of the usual time.
- Superior Proofreading: Detect subtle errors that are invisible to traditional methods.
- Focused Proofreading: Inspect each individual sentence component in isolation.
- Reliable Proofreading: Ensure every single word of your manuscript is correct.
- Easier Proofreading: Take the hardship out of crafting academic papers.

Bonus 1: Improved Productivity: Rapidly refine rough drafts to polished papers.
Bonus 2: Improved Authorship: Cultivate a clear, concise, consistent, writing style.
Bonus 3: Improved Reputation: Become known for rigorously precise publications.

Manuscript Source: https://www.biorxiv.org/content/10.1101/2021.03.07.434261v1

Manuscript Authors: Xaing Bai & Lujun Zhe

Audit Date: 29/03/21 **Audit Identifier:** M9Q13GV4O7R6GS7 **Code Version:** 3.6

Features of the Sentence Audit:

The Sentence Audit combines two complementary proofreading approaches:

1. Each sentence of your text is parsed and displayed in isolation for focused inspection.
2. Each individual sentence is further parsed into Minimal Sentence Components for a deeper review of the clarity, composition and consistency of the language you used.

The Minimal Sentence Components shown are the smallest coherent elements of each sentence of your text as derived from it's conjunctions, prepositions and selected punctuation symbols (i.e. commas, semicolons, round and square brackets).

The combined approaches ensure easier, faster, more effective proofreading.

Comments and Caveats:

• The sentence parsing is achieved using a prototype natural language processing pipeline written in Python and may include occasional errors in sentence segmentation.

• Depending on the source of the input text, the Sentence Audit may contain occasional html artefacts that are parsed as sentences (E.g. "Download figure. Open in new tab").

• Always consult the original research paper as the true reference source for the text.

Contact Information:

To get a Manuscript Microscope Sentence Audit of any other research paper, simply forward any copy of the text to John.James@OxfordResearchServices.com.

All queries, feedback or suggestions are also very welcome.

Research Paper Sections:

The sections of the research paper input text parsed in this audit.

Section No.	Headings	Sentences
Section: 1	Abstract	7
Section: 2	I. Introduction	20
N/A	--- --- --- --- --- --- ---	0
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The Sentence Audit Of The Research Paper

Title # Label free sensing with Terahertz multiple ring resonators

S1 [001] Abstract

S1 [002] Apart from their relevance for spectroscopy and imaging, terahertz signals have attracted a lot of interest for sensing.

Apart ...
... from their relevance ...
... for spectroscopy ...
... and imaging, ...
... terahertz signals have attracted a lot ...
... of interest ...
... for sensing.

S1 [003] In this paper, a label free terahertz sensor is proposed, which can be employed to detect the presence of molecules in the environment.

In this paper, ...
... a label free terahertz sensor is proposed, ...
... which can be employed ...
... to detect the presence ...
... of molecules ...
... in the environment.

S1 [004] The proposed sensor consists of an array of ring resonators, resonating at the frequency of f=1.2 THz.

The proposed sensor consists ...
... of an array ...
... of ring resonators, ...
... resonating ...
... at the frequency ...
... of f=1.2 THz.

S1 [005] By providing full-wave numerical simulations, it is shown that the proposed sensor is able to sense the variation of the refractive index in the environment.

By providing full-wave numerical simulations, ...
... it is shown ...
... that the proposed sensor is able ...
... to sense the variation ...
... of the refractive index ...
... in the environment.

S1 [006] The proposed structure is found to show larger sensitivity compared to previous reports.

The proposed structure is found ...
... to show larger sensitivity compared ...

... to previous reports.

S1 [007] Our findings provide a novel platform to realize label free terahertz sensors with extremely large sensitivity.

Our findings provide a novel platform ...
... to realize label free terahertz sensors ...
... with extremely large sensitivity.

S2 [008] I. Introduction

S2 [009] THz band radiation is a part of the electromagnetic spectrum, occupying the frequency between f = 0.1 – 10 THZ [1-10].

THz band radiation is a part ...
... of the electromagnetic spectrum, ...
... occupying the frequency ...
... between f = 0.1 – 10 THZ ...
... [1-10].

S2 [010] The waves in this frequency have some common properties.

The waves ...
... in this frequency have some common properties.

S2 [011] For instance, they can penetrate into various kinds of dielectric materials.

For instance, ...
... they can penetrate ...
... into various kinds ...
... of dielectric materials.

S2 [012] Due to the lack of efficient sources and detectors, this frequency spectrum is called the THz gap.

Due ...
... to the lack ...
... of efficient sources ...
... and detectors, ...
... this frequency spectrum is called the THz gap.

S2 [013] Remarkably, the energy of photons in the THz is smaller than the bandgap of the dielectric materials.

Remarkably, ...
... the energy ...
... of photons ...
... in the THz is smaller ...
... than the bandgap ...
... of the dielectric materials.

S2 [014] Therefore, THz waves can penetrate in these materials.

Therefore, ...
... THz waves can penetrate ...
... in these materials.

S2 [015] The transmitted wave can be employed to characterize the properties of materials, allowing one nondestructive evaluation, security and biomedical sensing [11-20].

The transmitted wave can be employed ...
... to characterize the properties ...
... of materials, ...
... allowing one nondestructive evaluation, ...
... security ...
... and biomedical sensing ...
... [11-20].

S2 [016] One important application of terahertz waves is label-free sensing [], which can be used for molecular sensing, for instance.

One important application ...
... of terahertz waves is label-free sensing ...
... [], ...
... which can be used ...
... for molecular sensing, ...
... for instance.

S2 [017] The usage of label-free technique prevents the challenges associated with labeling, including preparation of the sample.

The usage ...
... of label-free technique prevents the challenges associated ...
... with labeling, ...
... including preparation ...
... of the sample.

S2 [018] One of the most important way for label free sensing is based on refractive index changes.

One ...
... of the most important way ...
... for label free sensing is based ...
... on refractive index changes.

S2 [019] In this method, the structure senses biomolecules presence directly from the variation of the refractive index of the cladding medium.

In this method, ...
... the structure senses biomolecules presence directly ...
... from the variation ...
... of the refractive index ...
... of the cladding medium.

S2 [020] Many previous reports exist on the optical structures to achieve label-free sensing.

Many previous reports exist ...
... on the optical structures ...
... to achieve label-free sensing.

S2 [021] One of the most important classes of such sensors are surface plasmon resonance (SPR) based sensors [21-25].

One ...
... of the most important classes ...
... of such sensors are surface plasmon resonance ...
... (SPR) ...
... based sensors ...
... [21-25].

S2 [022] The working principle of the SPP sensors are the following: since the power of surface plasmon modes is mainly confined in an interface between metal and dielectric, it is sensitive to the changes in the refractive index of cladding material.

The working principle ...
... of the SPP sensors are the following: ...
... since the power ...
... of surface plasmon modes is mainly confined ...
... in an interface ...
... between metal ...
... and dielectric, ...
... it is sensitive ...
... to the changes ...
... in the refractive index ...
... of cladding material.

S2 [023] The oscillation of the electrons of a material on the edge of an interface made of a dielectric and metal is the basic principle of surface plasmon polaritons at any frequency range.

The oscillation ...
... of the electrons ...
... of a material ...
... on the edge ...
... of an interface made ...
... of a dielectric ...
... and metal is the basic principle ...
... of surface plasmon polaritons ...
... at any frequency range.

S2 [024] The propagation loss of the surface plasmon polaritons in the spectrum is high.

The propagation loss ...
... of the surface plasmon polaritons ...
... in the spectrum is high.

S2 [025] However, their localization is appropriate for sensing the changes in the dielectric refractive index.

End of Sample Audit

This is a truncated Manuscript Microscope Sample Audit.

To get the full audit of this text (or any other research paper),
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John.James@OxfordResearchServices.com
