

University of Groningen

A fluorescent nanodiamond foundation for quantum sensing in cells

Hemelaar, Simon Robert

IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.

Document Version

Publisher's PDF, also known as Version of record

Publication date:

2018

[Link to publication in University of Groningen/UMCG research database](#)

Citation for published version (APA):

Hemelaar, S. R. (2018). *A fluorescent nanodiamond foundation for quantum sensing in cells*. [Thesis fully internal (DIV), University of Groningen]. Rijksuniversiteit Groningen.

Copyright

Other than for strictly personal use, it is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), unless the work is under an open content license (like Creative Commons).

The publication may also be distributed here under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license. More information can be found on the University of Groningen website: <https://www.rug.nl/library/open-access/self-archiving-pure/taverne-amendment>.

Take-down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

Downloaded from the University of Groningen/UMCG research database (Pure): <http://www.rug.nl/research/portal>. For technical reasons the number of authors shown on this cover page is limited to 10 maximum.

Propositions

1. Adsorption of serum proteins and antibodies on the surface of fluorescent nanodiamonds has to be evaluated for each situation. (this thesis)
2. When incorporating nanodiamonds into cells by additional physical or chemical manipulations, the (sub)cellular responses have to be closely monitored. (this thesis)
3. Cleaned nanodiamonds in the ten to hundred nanometer range are not harmful to research cell lines. (this thesis)
4. Directing diamonds towards specific cellular structures or proteins will lead to nanoscale chemical information. (this thesis)
5. Researchers should take more advantage of information technology when analyzing their data.
6. The limitation of exact quantification of nanodiamond uptake inside cells is time and money.
7. Supervisors should motivate PhD students to remove their uncertainty about their own knowledge and skill.
8. The statement: "If a cluttered desk is a sign of a cluttered mind, of what, then, is an empty desk a sign?" of Albert Einstein is a fallacy.
9. The current way of educating researchers is a poor reflection of the original ideology of academia.