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Villigen, March 6th, 2014

Dear Editors,

We are pleased to resubmit to your attention our revised manuscript entitled **"X-ray phase-contrast imaging at 100 keV on a conventional source"**. This revision addresses the latest comments raised by the reviewers, as we received them on February 12th 2014. From your notification, we grasp that Reviewer #1 was fully satisfied with our work as submitted on December 16th, 2013. Reviewer #2 was also in favor of publication besides minor edits, which have been implemented. Reviewer #3, while acknowledging our interesting idea, still raised three main concerns.

The major one is the need of establishing phase-contrast imaging as a viable technique, in particular at higher energies. We expanded our discussion to address this issue: since the phase interaction declines less quickly than absorption – and dose – as the energy increases, phase-contrast imaging at high energies has the potential to reduce the delivered dose for an equivalent or better image quality.

Reviewer #3 also suggests that the size of the interferometer would be too short for industrial applications. We would like to confirm that we realized only a first prototype, but the geometrical parameters can be freely chosen. In fact, a longer interferometer would be easier to set up, since the pitch of the gratings can be larger for an equivalent sensitivity, thus making the fabrication process easier.

Finally, the concerns about the interest of industrial partners for a scanning system can be addressed by referring to the commercially available MicroDose mammography system of Philips. It employs the same scanning procedure in order to reduce the dose, while still having reasonable exposure times.

We are convinced that the revised manuscript as well as the *response to reviewers* fully address the issues raised and we are now really confident that with this new material you will find the manuscript suitable for publication on Scientific Reports.

Yours faithfully,

A handwritten signature in blue ink, consisting of a stylized 'M' followed by a horizontal line and a small upward stroke.

Prof. Marco Stampanoni

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