Safety Observer app for use in measuring safe working conditions and behaviour with nanomaterials

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Pete Kines, Senior researcher
Psychologist and Civil engineer
Division of Safety Research
pki@nfa.dk

Affiliation

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**Authors:** Pete Kines, Marie Louise Kirkegaard, Ulla Birgitte Vogel & Keld Alstrup Jensen; National Research Centre for the Working Environment, Denmark
Presentation objective

Â Preliminary results in developing a tool for use in safety rounds in workplaces and laboratories that work with or are exposed to chemicals and manufactured nanomaterials

Â The tool is to be intuitive and easily useable by students, workers, faculty, lab directors and OSH professionals in assessing nano OSH risks

Hierarchy of OSH measures

1 Avoid / eliminate the hazard
2 Technical safety measure
3 Organizational safety measures
4 Use of personal protective equipment
5 Behavioural safety measures
Reactive and proactive measures

**Decision**
- OSH goals
- Strategy
- Acceptable risks
- Standards, SOPs
- Activities, etc.

**Process**
- Proactive measures
  - Near miss incidents
  - Tool maintenance
  - OSH training
  - Communication, etc.

**Results**
- Reactive measures
  - Accidents
  - Injuries, illness
  - Works absence
  - Economics, etc.

- Fast feedback: days/weeks/months
- Slow feedback: 1-3 year

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‘Safety Observer’ app

- Free ☻, iOS/android, smartphone/tablets, app stores in 150+ countries
- For use in systematic safety rounds
- App template for Nano OSH in academia and industry
Measuring safety conditions and behaviour

• Behaviour, ergonomics, PPE, technical assistive devices
• In labs, production, hallways, change rooms
• Signs, labels, warnings...
• Equipment, tools etc.,
• Order and tidiness
• Etc.

• Make your own lists!!

Examples of things to observe and measure

1) Signage, marking and labelling (one of more observation for each room, storage area, piece of equipment or tool, etc.)

2) Personal protective equipment (e.g. gloves, lab coats, long pants, safety glasses, ear plugs, face shields, closed-toed shoes, respiratory masks)

3) Nano handling, storage, transport (one observation for each process in a given area)
Examples of things to observe and measure

4) Ventilation and filters (e.g. one observation for each HEPA-filer as to whether it is properly maintained and cleaned)

5) Technical aids (e.g. fume exhaust hoods, glove boxes)

6) Order and tidiness (work and transport areas); First aid equipment

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Examples of things to observe and measure

7) Hygiene (e.g. no food or drinks in the lab; changing clothes)

8) Waste storage, recycling and disposal (e.g. signs, labels)

9) First aid (e.g. one observation per necessary station)
### Nano OSH index

<table>
<thead>
<tr>
<th>Topic</th>
<th>Correct</th>
<th>Not correct</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Nano signs, labels, etc.</td>
<td>9</td>
<td>7</td>
<td></td>
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<tr>
<td>2. Nano storage</td>
<td>14</td>
<td>5</td>
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<td>3. Nano ventilation and filters</td>
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<td>4. Nano waste disposal</td>
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<td>13</td>
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<tr>
<td>5. Nano personal protective clothing/equipment</td>
<td>23</td>
<td>14</td>
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<td>6. Etc.</td>
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<td>2</td>
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<tr>
<td><strong>Total</strong></td>
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<td><strong>42</strong></td>
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</table>

\[
\frac{69}{69 + 42} \times 100 = 62\%
\]

#### Laboratory set-up

- **Order and tidiness**
  - Correct: 32
  - Not correct: 20

#### Access and transportation routes

- Correct: 13
- Not correct: 6

- **Total**
  - Correct: 69
  - Not correct: 42
  - Percentage: 62%
Safety index

Week 2018

% OSH working conditions and behaviour

Safety Observer app

- Systematic observations of safety conditions and behaviour
- Can be used in many branches and settings
- Lists/templates can be written in any language
- Add notes, photos and smileys
- Report provided on device and in email (PDF)
App links

Information
Åwww.nfa.dk/safetyobserver

Administrator modul
Åwww.safetyobserver.mobile-identity.com

Thank you for your attention

Pete Kines, pki@nfa.dk
PhD-Civil Engineering, MSc-Psychology
Division of Safety Research
National Research Centre for the Working Environment
Copenhagen, Denmark