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Philips Innovative Applications NV Turnhout

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**Infoday NMP and Factories of
the Future**

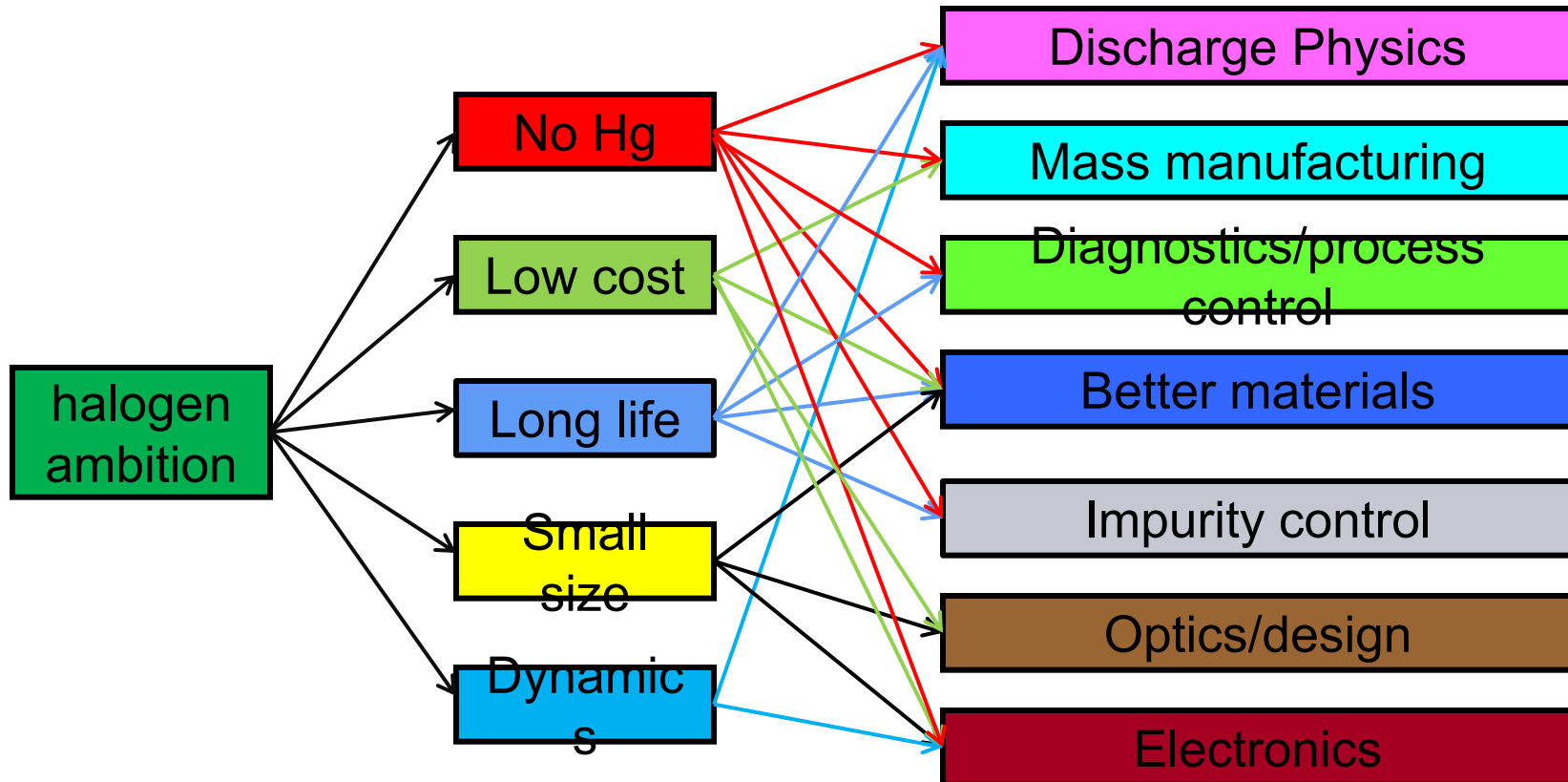
Project idea

- Hg-free High Intensity Discharge Lamps
- Involved competences:
 - Materials and Micro-Nanotech: metals and ceramics
 - New Production Technologies for mass manufacturing
 - High Temperature Chemistry
 - Impurity control
 - Miniaturization
 - Diagnostics/process control
 - Optics/design
 - Discharge Physics and modelling
 - Electronics

Objectives:

- High Intensity Discharge lamps are very efficient light sources delivering excellent light quality, and long life
- Application area is limited due to high price, large size and use of Hg
- Our ambition is to enter halogen applications, to do so we need to
 - Eliminate use of Hg, maintaining efficacy and light quality
 - Realize cost breakthrough in components and manufacturing
 - Improve start-up time and hot restrike behavior
 - Enable dimming
 - Realize miniaturization in both lamp and driver electronics
 - Further improve lifetime and light output over life

Interactions



Competences we have in house:

- System architecture for Hg-containing systems:
 - Discharge physics
 - Lamp chemistry
 - Materials and processing
 - Lamp-driver interaction
 - Electronics
 - Application knowledge
- For Hg-free systems the design rules will change:
 - Better materials are the basis for HID innovation
 - They will require new materials and processing
 - They will require new drive schemes and electronics
 - Of course reusing present knowledge where possible

Looking for...

- **Materials suppliers:**
 - Metals, glass, ceramics
- **Equipment suppliers:**
 - Clean manufacturing technology and process control
 - High speed manufacturing
- **Knowledge suppliers:**
 - Diagnostics/impurity control
 - High Temperature Chemistry
 - Basics understanding from 10^{-9} to 10^8 seconds
- **System design:**
 - Optics/mechanics
 - Electronics

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