

# Conclusions and recommendations

## 3.7 Conclusions

AMOLF has made an outstanding scientific impact and has established and maintained a worldwide reputation as one of the leading research institutions in the fundamental investigations of matter. In this way AMOLF has built an international reputation not only for itself, but also it has contributed to the elevation of the quality and profile of Dutch science. AMOLF is a jewel for fundamental research in the Netherlands.

The creation of ARCNL illustrates in one example AMOLF's significant impact on Dutch science, in that the new lab was a product of an AMOLF-ASML partnership, and builds on (and customises to the field of next-generation lithography science and technology) the AMOLF model.

The committee very highly valued the following key aspects, which it feels provide the basis for AMOLF's success:

- Modest size of groups and staff in total which enables AMOLF to safeguard an organisational culture of close interaction and collaboration, fostering personal development, multidisciplinary cross-overs and scientific excellence;
- Strong emphasis on sustainable talent development- from recruitment to mobility;
- Flexibility in focus and themes to act on promising novel research opportunities and provide a sustainable model for innovation in the Dutch field of material science;
- Excellent technical infrastructure (including equipment and personnel).

Together, these aspects might be thought of as the AMOLF model of institutes for basic research and could bring important added value also to bigger research institutions such as universities.

AMOLF has a clear sustainable strategy building on existing scientific strength but also a strategy allowing for new group leaders being hired and the growth of entirely new research themes

## 3.8 Recommendations

Based on the evaluation of the institute and the above assessments, the committee has a few specific recommendations for the near future.

The committee strongly recommends that AMOLF should:

- Maintain and extend the strong links between the four research themes;
- Explore further opportunities for start-ups. Especially in the domain of physics instrumentation, opportunities will arise;
- Safeguard the AMOLF model and maintain the limit on the size of the research groups;
- Monitor diversity in all aspects and maintain managerial focus on gender policies and hidden biases.

The committee strongly recommends that NWO should:

- Safeguard the consistency in AMOLF's overall budget. AMOLF is world leading because of its consistent ability to foster cutting edge research. Large fluctuations in

annual NWO support together with an increasing dependency on (short term) European funding streams will make AMOLF vulnerable. AMOLF requests an increase of 740 k€ to its annual mission budget. This budget increase is required to keep the scientific infrastructure state-of-the-art and to fulfill AMOLF's regional function within the Amsterdam Science Park as a central facility for nanofabrication and characterisation (300 k€). Additional budget is requested to pay for the costs of the new data management policy (100 k€), to enable the accelerated increase of the proportion of female scientific group leaders to 25% in 2022 (130 k€), and to cover the costs of guest positions and collaborative projects with university groups (210 k€). The Committee strongly endorses this request for additional funding for AMOLF to remain an excellent forerunner in science and society;

- Provide additional, targeted support for policy-driven and administrative aspects that are becoming increasingly important, such as support for large-scale data management, tech transfer, IP, and patents. In addition, create support mechanisms among all NWO institutes to help influence EU science policy and identify favorable EU programmes.