



**BESSY | AZM**

Berliner Elektronenspeicherring-Gesellschaft  
für Synchrotronstrahlung m.b.H.

**Anwenderzentrum für Mikrotechnik**

*your partner in micro and nano engineering*

## IRUVX Kick-Off

Daniel Schondelmaier

Olaf Mertsch

WP 7.3.3 Multiple use of FEL beam

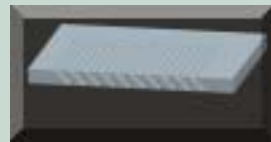
„Beam splitter“

[www.azm.bessy.de](http://www.azm.bessy.de)

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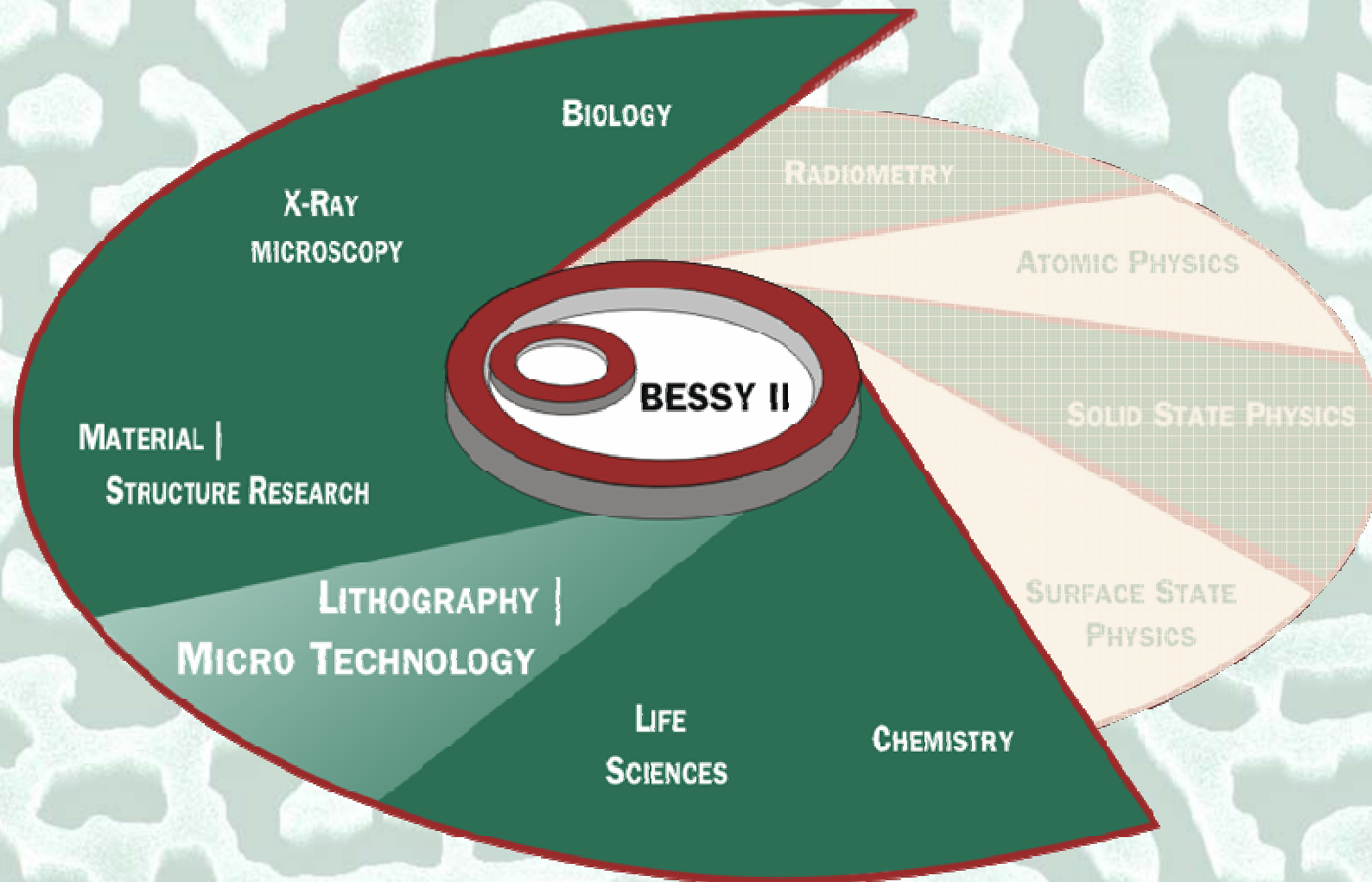
### 1. Introduction – BESSY | AZM



### 2. Beam splitter



# BESSY II - International Microscope in Space and Time





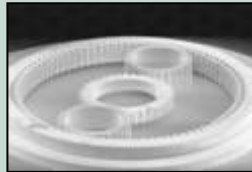
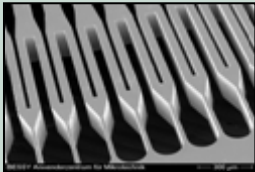
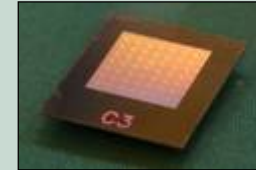


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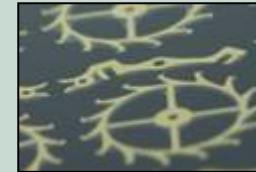
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**Micro Molds**



**Micro Parts**



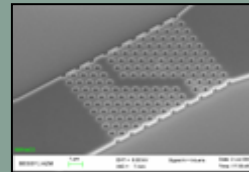
**Customer Applications**



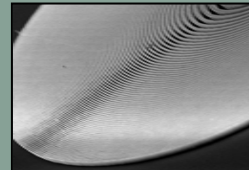
**Surface Science**



**Life Sciences**



**Micro- and Nano Optics**



**Research and Development**

**Lithography and LIGA**

**Etching**

**Precision Machining**



X-Ray



UV



E-Beam



Chemistry



RIE



Milling



Laser



EDM

**Technology & Equipment**



### **WP 7.3.3 Multiple use of the FEL beam**

*Participants: All (BESSY responsible)*

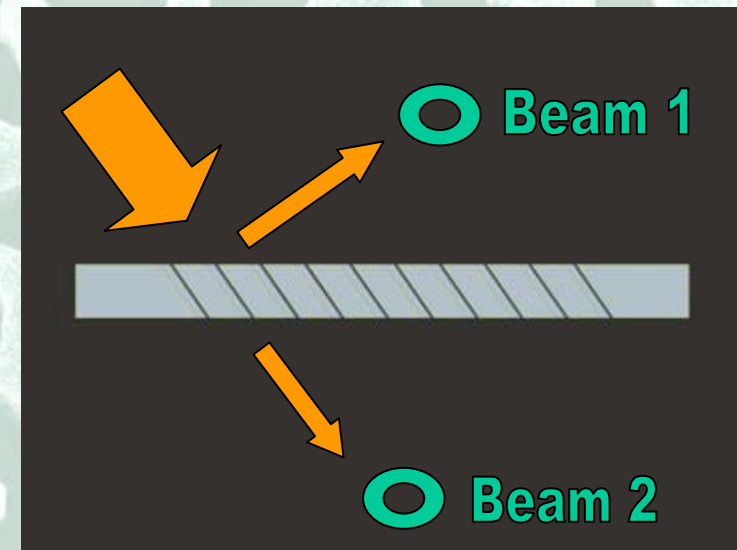
*Type: Technical, governance & logistic*

- Increase of user capacity
  - Inexpensive way is by splitting the beam
  - using special optical devices.
- Merits and Applicability will be evaluated
  - different classes of scientific applications
- A prototype will be built
  - tested based on existing technology

#### **Deliverables**

D7.8 Fabrication of test structure

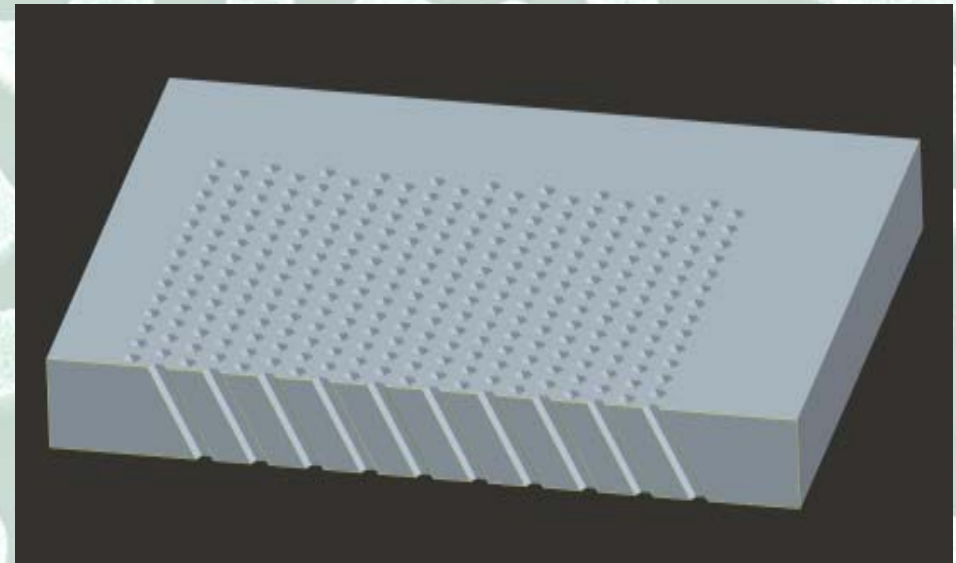
D7.9 Demonstration of a beam splitting technique





## Proof of principle and setting of task

- Layout
  - Spectra dependence
  - Tilt angle
  - Thermal conditions
  - Beamline integration
- Simulation / Calculation
- Fabrication
  - Technology (LIGA, EDM,...)
  - Material of the Beam Splitter
- Integration
  - Characterization chamber
  - Detection method



**Sketch of the Beam splitter**



# Thank you for your attention !



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