

# New Scientific Possibilities and Directions

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## Plan

- This is **NOT** a usual lecture, but a kind of mixture of lecture and practice.
- Some general introduction is given on how we think about new scientific possibilities and directions.
- Some of you are requested to introduce yourselves, your research fields, and your opinions about **YOUR** possibilities and directions.
- Your opinions may not be necessarily limited in your own research field.

## Brief Introduction of myself

- My name is Tetsuya Ishikawa. I am the Director of RIKEN SPring-8 Center and the Project Leader of X-ray Free Electron Laser.
- My research field is X-Ray Optics including those for coherent x-rays.
- I have been working around the SR facilities since 1982 when the Photon Factory started operation.
- I had been the Optics Group Leader/Beamline Division Director till 2006 when Dr. Shunji Goto took over the position.

## You have learned a lot in this school ...



Thank you for joining us in this Cheiron School 2007. Now, you are attending the last lecture titled “**New Scientific Possibilities and Directions**”.

You have learned a lot about synchrotron radiation and its applications in the preceding lectures. It is not surprising that you may feel the science and technologies related to the synchrotron radiation are too widely diverse to be an expertise in everything.

**Don't be afraid, because no one can cover everything!**

**You can be the world's top scientist in a certain field.**

## You have to know where you are...



All lectures given in this school are the maps of science/technology fields that have been already explored by other scientists. All of you, who are young with full potential, may want to construct new roads in the fields. So focus yourselves where you are on the map to start with.

**New possibilities really lie in what has not been directed in the lectures: It is you to explore the new roads!**

## History can tell you something...



You have listened to the lecture for 'History of SR' by Prof. Taizo Sasaki.

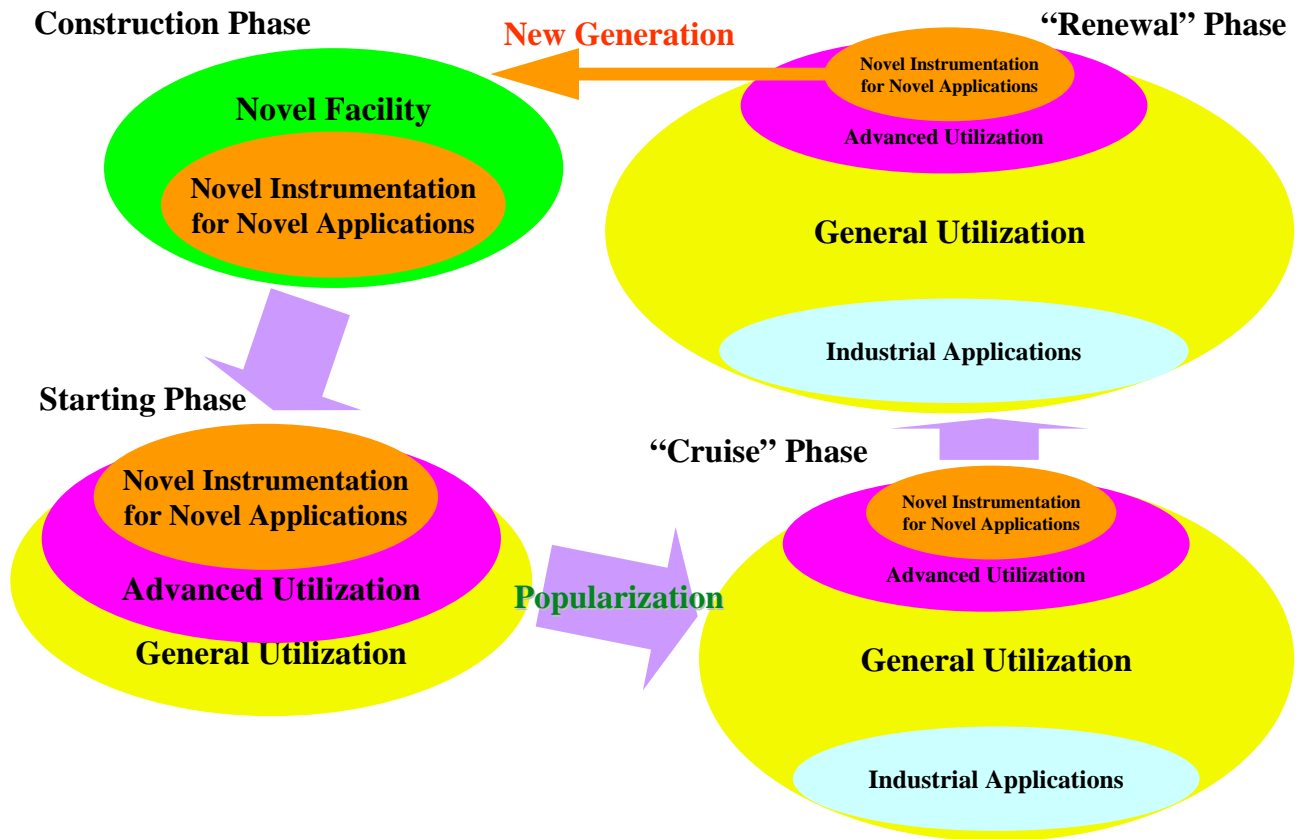
Now you know the historical trend: The pursuit of **BRIGHTNESS**.

Does this trend continue? Or does new trends open the doors to new sciences?

Consider the next steps you would like to take following to what have been shown in the lectures.

**It is all up to you!**

# My Personal View; Learning Old, Getting New



## Exercise 1



- What is the greatest impact of the SR on your own research?
- Can you describe any possible improvement you would like to have in the SR light sources?
- Every scientific tool has 'lifetime'. How do you access the lifetime of the SR science, and why?
- What is your ideal light source? Do you need light sources beyond SRs?

## Exercise 2



- What is the greatest impact of the SR on your research field?
- Can you describe any possibilities to combine your research field with other fields using SR light? If yes, what are they?
- You know well you can't proceed your research only with the SR. How can you facilitate your research with SR and other tools/techniques?
- Can you describe any possible improvement you would like to have in SR end-station instrumentation? Can you describe how?

## Exercise 3



- Independently of your research field, can you describe any idea you would like to try by using SR light? If yes, what is it?
- What are the necessary resources when you put the above idea to execution?
- Further, can you describe any idea you would like to have someone try by using SR light? If yes, what is it?

## **Summary & Outlook**

**New scientific possibilities and directions are not what you will be taught, but what you yourself shall find or create.**

**Thank you again for joining us this Cheiron School! We are looking forward to seeing you as lecturers of this school some day in future.**