Research of practical use lies at the heart of all activities pursued

by Fraunhofer - the largest organization for applied research in

Europe. Founded in 1949, the research organization undertakes applied

research that drives economic development and serves the wider

benefit of society. Its services are solicited by customers and

contractual partners in industry, the service sector and public

administration.

实际用途的研究是欧洲最大的应用研究组织弗劳恩霍夫所追求的所有活动的核心。该研究机构成立于1949，承担推动经济发展、服务社会广泛效益的应用研究。它的服务是由客户和合同伙伴在工业、服务部门和公共行政中征求的。

At present, Fraunhofer maintains 72 institutes and research units.

The majority of the more than 25 000 staff are qualified scientists

and engineers, who work with an annual research budget of 2.3

billion euros. Of this sum, almost 2 billion euros is generated

through contract research. Around 70 percent of the Fraunhofer’s

contract research revenue is derived from contracts with industry

and from publicly financed research projects. Around 30 percent is

contributed by the German federal and state governments in the form

of base funding, enabling the institutes to work ahead on solutions to

problems that will not become acutely relevant to industry and society

until five or ten years from now.

International collaborations with excellent research partners and

innovative companies around the world ensure direct access to regions

of the greatest importance to present and future scientific progress

and economic development.

目前，弗劳恩霍夫拥有72个研究所和科研单位。25多名000名员工中，绝大多数是合格的科学家和工程师，他们的年度研究预算为23亿欧元。在这笔款项中，通过合同研究产生了将近20亿欧元。弗劳恩霍夫合同研究收入的70%来自与工业和公共资助的研究项目的合同。大约30%是由德国联邦政府和州政府以基本资金的形式提供的，这使得研究所能够提前解决五年或十年后不会与工业和社会密切相关的问题。

与世界各地优秀研究伙伴和创新公司的国际合作，确保直接接触到当前和未来科学进步和经济发展最重要的地区。

With its clearly defined mission of application-oriented research and

its focus on key technologies of relevance to the future, Fraunhofer

plays a prominent role in the German and European innovation process.

Applied research has a knock-on effect that extends beyond the direct

benefits perceived by the customer: Through their research and

development work, the Fraunhofer Institutes help to reinforce the

competitive strength of the economy in their local region, and

throughout Germany and Europe. They do of new technologies, and

helping to train the urgently needed future generation of scientists

and engineers. Therefore, they are also very closely linked to the

regional universities.

弗洛伦霍夫以其明确定义的面向应用研究的使命，专注于与未来相关的关键技术，在德国和欧洲的创新过程中起着举足轻重的作用。应用研究具有超越顾客感知的直接利益的敲击效应：通过他们的研究和开发工作，弗劳恩霍夫研究所有助于增强本地区以及整个德国和欧洲的经济竞争力。他们从事新技术，并帮助培养急需的未来一代科学家和工程师。因此，它们与地方大学也有着非常密切的联系。

As an employer, Fraunhofer offers its staff the opportunity to

develop the professional and personal skills that will allow them

to take up positions of responsibility within their institute, at

universities, in industry and in society. Students who choose to work

on projects at the Fraunhofer Institutes have excellent prospects of

starting and developing a career in industry by virtue of the

practical training and experience they have acquired.

Fraunhofer is a recognized non-profit organization that takes its

name from Joseph von Fraunhofer (1787-1826), the illustrious Munich

researcher, inventor and entrepreneur.

作为雇主，弗劳恩霍弗为员工提供了发展专业和个人技能的机会，这将使他们能够在他们所在的研究所承担责任。

大学、工业和社会。选择在弗劳恩霍夫研究所工作的学生有着良好的发展前景。

他们获得的实际训练和经验。

弗劳恩霍夫是一个公认的非营利组织，其名称来自约瑟夫·冯·夫琅和费（17871826），著名的慕尼黑研究者、发明家和企业家。

The Fraunhofer Model - Technology Transfer from Universities to Industry

Work 11 years

Work at Telecom ，IT secture

Founder Josepher P7

Researcher inventor entrepreneur

25327 staff ，72 institues and research units

Fraunhofer Groups Pooling expertise

Innovation research 。 microelectronics，information and communication technology，

The German research landscape

Fraun

Fraunhofer role in German National Innovarion strategy

High level committes/working groups resulting activites

1. Chancellor’s
2. Federal government

model

Bridge bwteen universitu and company

Universities perform excellent scientific research

RTOs bridge the innovation gap with technological R&D

Innovative companies create new products

Like in japan ,cooperate with Kyoto university

Why is successful?

Cooperate with umbersities

Inistitutional integration bt dual appointment;

Fraunhofer institute director=university professor(chair)

Access to cost-intensive equipment(much better than university)

Human resources

Staff:

Scientific,technical and administrative staff(最多)

Students（第二）are paid

Apprentices

Fixed-term contacts

System flexible（go to Fra，and can return to university）

Fraunhofer Financial Model

Base funding public projects industrial projects

Allocationo f base funding

How does Fraunhofer help its customers? P22,23

3rd reaon why successful

International activities and revenues worldwide

International revenues of the Fraun

Fraunhofer in Japan

80% of Fraunhofer institutsa are collaborating wit Japanese companies in app. 180 projectis peryar;app.220 Japanese companies are customers of Fraunhofer

Fraunhofer in Japan lacated in Sendai,Kyoto,Osaka

The economic ben MP3

Fraunhofer recent innovations and future work

(2020:Big data analysus platform,next-gen energy-system…

Our research covers future..

Fraunhofer Lighthouse Projects

ML4P,ZEPOWEL,eHARSH,QUILT

Fraunhofer cluster of excellence

Claim

Scientific excellence

Sustained lead throuhj synergiers

…

Industrie 4.0

National Platform Industrie 4.0

Dimensionss of Ind 4.0

Enterprise transformation

Economic potential and challenges of Ind 4.0

Forecast until 2025

Up to 430,000 new jobs,but simultaneous elimination of 490,000 low-skilled jobs

GDP growth

Total investment increase

Functional ingredients

Applicaiotion in food

Replacement of fat,

Antimicrobial bio-polymers

Care-o-bot

Intelligent care cart

What. Brings the future