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High quality Material and intrinsic Properties of InN and indium rich Nitride Alloys - (The RAINBOW ITN)

Fact Sheet

Project Information

RAINBOW

Grant agreement ID: 213238

Project closed

Start date

1 October 2008

End date

30 September 2012



Funded under

Specific programme "People" implementing the Seventh Framework Programme of the European Community for research, technological development and demonstration activities (2007 to 2013)

Total cost

€ 4 778 667,00

EU contribution

€ 4 778 667,00

Coordinated by

CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE
CNRS
 France

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Through the looking glass: search engines, data and the semantic adventure

Objective

Indium nitride is a new narrow gap semiconductor (<0.7 eV), which alloys with GaN (3.5 eV) and AlN (6.2 eV) will allow the spectral range from telecom to hard UV wavelengths to be covered. This narrow band gap makes InN an exciting material from which to develop highest efficiency solar cells. Moreover, due to an electron mobility of around $4000 \text{ cm}^2/\text{Vs}$ and very high saturation velocities, InN is an ideal material for the development of high electron mobility devices capable of operating in the Terahertz range. To ensure the production of reliable commercial devices, rigorous fundamental research is required to understand the layer growth mechanisms and optimize material properties. In RAINBOW, academic and industrial consortium, the theoretical work will encompass modelling of the atomic structure and properties of the material from empirical potentials to ab initio techniques. Experiments will provide correlated structural, electronic, optical and chemical information from the nano to the macroscopic scale. In a closely concerted effort, we will determine the best conditions for the growth of highest quality InN and In rich (In,Ga,Al)N alloys by the main growth techniques (MOVPE, PAMBE, HVPE). Under the supervision of world leading experts, numerous young researchers will directly benefit from this interdisciplinary and multisectorial research and training effort. The young researchers involved in this programme will also learn to manage research and industrial projects.

Fields of science (EuroSciVoc)

[natural sciences](#) > [chemical sciences](#) > [inorganic chemistry](#) > [post-transition metals](#)

[natural sciences](#) > [physical sciences](#) > [electromagnetism and electronics](#) > [semiconductivity](#)



Keywords

Programme(s)

[FP7-PEOPLE - Specific programme "People" implementing the Seventh Framework Programme of the European Community for research, technological development and demonstration activities \(2007 to 2013\).](#)

Topic(s)

[PEOPLE-2007-1-1-ITN - Marie Curie Action: " Networks for Initial Training"](#)

Call for proposal

FP7-PEOPLE-2007-1-1-ITN
[See other projects for this call](#)

Funding Scheme

[MC-ITN - Networks for Initial Training_\(ITN\)](#)

Coordinator



CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE CNRS

EU contribution

€ 701 500,00

Total cost

No data

Address

RUE MICHEL ANGE 3

75794 Paris

 **France** 

Region

Ile-de-France > Ile-de-France > Hauts-de-Seine

Activity type

Research Organisations

Links

- [Contact the organisation](#)
- [Website](#)
- [Participation in EU R&I programmes](#)
- [HORIZON collaboration network](#)

Participants (13)



TECHNISCHE UNIVERSITAT BERLIN

Germany

EU contribution

€ 397 079,00

Address

STRASSE DES 17 JUNI 135
10623 Berlin

Region

Berlin > Berlin > Berlin

Activity type

Higher or Secondary Education Establishments

Links

- [Contact the organisation](#)
- [Website](#)
- [Participation in EU R&I programmes](#)
- [HORIZON collaboration network](#)

Total cost

No data



UNIVERSIDAD POLITECNICA DE MADRID

Spain

EU contribution

€ 388 526,00

Address

CALLE RAMIRO DE MAEZTU 7 EDIFICIO RECTORADO
28040 Madrid

Region

Activity type

Higher or Secondary Education Establishments

Links

[Contact the organisation](#) [Website](#)

[Participation in EU R&I programmes](#)

[HORIZON collaboration network](#)

Total cost

No data



AIXTRON AG

Germany

EU contribution

€ 304 355,00

Address

Kackertstrasse 15-17
52072 AACHEN

Activity type

Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links

[Contact the organisation](#) [Website](#)

[Participation in EU R&I programmes](#)

[HORIZON collaboration network](#)

Total cost

No data



ALMA MATER STUDIORUM - UNIVERSITA DI BOLOGNA

Italy

EU contribution

€ 412 906,00

Address

VIA ZAMBONI 33
40126 Bologna

Region

Activity type

Higher or Secondary Education Establishments

Links

[Contact the organisation](#) [Website](#)

[Participation in EU R&I programmes](#)

[HORIZON collaboration network](#)

Total cost

No data



III-V LAB

France

EU contribution

€ 297 101,00

Address

1 AVENUE AUGUSTIN FRESNEL CAMPUS POLYTECHNIQUE
91767 Palaiseau Cedex

Region

Ile-de-France > Ile-de-France > Essonne

Activity type

Other

Links

[Contact the organisation](#) [Website](#)

[Participation in EU R&I programmes](#)

[HORIZON collaboration network](#)

Total cost

No data



UNIVERSITY OF STRATHCLYDE

United Kingdom

EU contribution

€ 416 019,00

Address

Richmond Street 16
G1 1XQ Glasgow 

Activity type
Higher or Secondary Education Establishments

Links
[Contact the organisation](#)  [Website](#) 
[Participation in EU R&I programmes](#) 
[HORIZON collaboration network](#) 

Total cost
No data



FRIEDRICH-SCHILLER-UNIVERSITÄT JENA

 Germany
EU contribution

€ 288 955,00

Address
**FÜRSTENGRABEN 1
07743 JENA** 

Region
Thüringen > Thüringen > Jena, Kreisfreie Stadt

Activity type
Higher or Secondary Education Establishments

Links
[Contact the organisation](#)  [Website](#) 
[Participation in EU R&I programmes](#) 
[HORIZON collaboration network](#) 

Total cost
No data



ECOLE POLYTECHNIQUE FEDERALE DE LAUSANNE

 Switzerland
EU contribution

€ 317 981,00

Address

BATIMENT CE 3316 STATION 1
1015 Lausanne 

Region
Schweiz/Suisse/Svizzera > Région lémanique > Vaud

Activity type
Higher or Secondary Education Establishments

Links
[Contact the organisation](#)  [Website](#) 
[Participation in EU R&I programmes](#) 
[HORIZON collaboration network](#) 

Total cost
No data



UNIVERSITY OF WARWICK

 United Kingdom
EU contribution
€ 425 259,00

Address
**KIRBY CORNER ROAD UNIVERSITY HOUSE
CV4 8UW COVENTRY** 

Region
West Midlands (England) > West Midlands > Coventry

Activity type
Higher or Secondary Education Establishments

Links
[Contact the organisation](#)  [Website](#) 
[Participation in EU R&I programmes](#) 
[HORIZON collaboration network](#) 

Total cost
No data



TECHNISCHE UNIVERSITAET ILMENAU

 Germany
EU contribution

€ 198 936,00

Address

EHRENBERGSTRASSE 29
98693 Ilmenau 

Activity type

Higher or Secondary Education Establishments

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

No data



INSTYTUT FIZYKI POLSKIEJ AKADEMII NAUK

 Poland

EU contribution

€ 229 850,00

Address

AL LOTNIKOW 32/46
02 668 Warszawa 

Region

Makroregion województwo mazowieckie > Warszawski stołeczny > Miasto Warszawa

Activity type

Research Organisations

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

No data



AALTO KORKEAKOULUSAATIO SR

 Finland

EU contribution

€ 308 284,00

Address

OTAKAARI 1

02150 Espoo 

Region

Manner-Suomi > Helsinki-Uusimaa > Helsinki-Uusimaa

Activity type

Higher or Secondary Education Establishments

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

No data



OTTO-VON-GUERICKE-UNIVERSITAET MAGDEBURG

 Germany

EU contribution

€ 91 916,00

Address

UNIVERSITAETSPLATZ 2

39106 Magdeburg 

Region

Sachsen-Anhalt > Sachsen-Anhalt > Magdeburg, Kreisfreie Stadt

Activity type

Higher or Secondary Education Establishments

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

No data

Last update: 16 February 2022

Permalink: <https://cordis.europa.eu/project/id/213238>

European Union, 2025

