

Name of the Partnering Organization:	Institute of Solid State Physics, University of Bremen	 Universität Bremen
Location (town, country):	Bremen - Germany	
Web site address:	http://www.ifp.uni-bremen.de/	
Brief description of the organization		
<p>The University of Bremen (UoB) has around 20,000 students and employs 2,000 scholars and scientists, making it one of the largest research institutions in the North of Germany. The scope of research at UoB covers most fields and disciplines, and cutting edge research is carried out at UoB in 12 Faculties and numerous different institutes. The transfer of ideas, research findings and human resources from the University to the economy and society in general is a major goal of the Bremen University which acts as the innovation motor of the region. In 1985 Bremen University set up the Central Transfer Bureau to implement this goal. This is the hub and first point of contact for all sorts of cooperation projects with the University. Hardly any other university can boast in relation to its size so many non-university research institutions in its immediate neighborhood: This close proximity opens up possibilities for intensive cooperation on research projects and there are currently around 30 joint professors working both within and outside the University walls. The impressive research infrastructure offered by UoB is attracting more and more enterprises to locate in the technology park which encircles the campus. Some 400 high-tech corporations have already located there, many cooperating with the Faculty of Physics and Electrical Engineering (http://www.ifp.uni-bremen.de/), containing the Institute of Solid State Physics. This Institute consists of four strong groups (Electron Microscopy, Semiconductor Optics, Semiconductor Epitaxy, Surface Physics), all relevant to the present project, particularly in expertise, available equipment, and software important for innovative and applied research.</p>		
Description of the research group		
<p>The Semiconductor Epitaxy group is a part of the Institute of Solid State Physics and consists of 6 labs devoted to growth, characterization and processing of II-IV and III-V semiconductor nanostructures. Most characterization tool available in the group, which include: Scanning Tunneling Microscopy, X-ray photoemission electron spectroscopy, Spot Profile Analysis Low-Energy Electron Diffraction together with currently run projects as MBE growth of Manganese doped GaN lay in the very scope of EAgLE and so the very potential of this group can be employed to help strengthening EAgLE's abilities in: (i) intellectual property and patent application issues, particularly contributing to elaboration of a strategic intellectual property development plan, (ii) in-house development of high profile epitaxy and nanocharacterization tools for optoelectronic and spintronic applications, (iii) development of equipment and protocols for device demonstrations, and (iv) upgrading, development, and acquisition of research equipment.</p>		
Selected list of relevant publications		
<p>Light-emitting diode based on mask- and catalyst-free grown N-polar GaN nanorods, G. Kunert et al., Nanotechnology 22, 265202 (2011); Superradiance of quantum dots, M. Scheibner, T. Schmidt, L. Worschech, A. Forchel, G. Bacher, T. Passow, and D. Hommel, Nature Physics 3, 106-110 (2007). Direct observation of correlations between individual photon emission events of a microcavity laser, J. Wiersig et al., Nature 460, 245 (2009)</p>		
Key researcher's CV		
<p>Professor Detlef Hommel is a world-acclaimed expert in semiconductor optoelectronic devices, who has developed, among other accomplishments, II-VI and III-V blue laser diodes as well quantum dot single photon emitters working at room temperature. He has been initiating and supervising research involving all steps necessary for fabrication of the working devices: epitaxy, processing, characterization, and demonstration. His publication lists counts over 500 positions, and contains papers published in Nature, Nature Photonics, Phys. Rev. Lett. Appl., Phys. Lett. and other high impact journals. He has also submitted 10 patent applications. Along with other distinctions, he was appointed as a chair of two leading international conferences on both II-VI and nitrides compounds. Professor Hommel graduated from the University of Warsaw and completed his PhD at IF PAN, and recently has been serving in a panel evaluating a project obtained by IF PAN within the Cohesion Found. So, he is well acquainted with strengths and also weaknesses of IF PAN and will be a valuable member of the International Steering Committee.</p>		