

Joint laboratory Annealsys and Institut des Nanotechnologies de Lyon for CVD/ALD process development.

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Annealsys is pleased to announce the creation of a joint laboratory (InCVD) with Institut des Nanotechnologies de Lyon (INL - UMR CNRS 5270) supported by the French National Research Agency (ANR: Agence Nationale de la Recherche).

The InCVD laboratory is dedicated to innovating chemical vapor deposition processes and associated materials and will be directed by Dr Catherine Dubourdieu (INL) in association with Dr Jean-Manuel Decams (Annealsys).

This new partnership will leverage the unique and complementary expertise of both entities and will be driven by common research and innovation objectives. The common laboratory will aim at developing new materials, in particular by addressing the monolithic integration of functional oxides on semiconducting and on graphene platforms, using the DLI-MOCVD/ALD equipments developed by Annealsys. The scientific, technical and innovation program will focus on: i) the improvement of the CVD/ALD processes, ii) the development of innovative materials in thin films and heterostructures, iii) their integration in devices for nanoelectronic and energy applications.

The InCVD laboratory will be a development platform for the demonstration of added-value materials and Annealsys reactors performance. The common innovation, technical and scientific program addresses:

- Monolithic integration of functional oxides on Si and graphene for nanoelectronic devices (logic and memories). From a process standpoint, we will address the challenge of composition control for ternary oxides grown by CVD and ALD.
- Defects engineering (oxygen vacancies) in binary oxide nanolaminates based on HfO₂ and other binary oxides that can be programmed to multiple stable resistive states (memristors) for neuromorphic computing. The ability to isolate the reactor chamber from the evaporator will be an advantage to finely control interfaces for multilayer growth.
- 1D nanostructure growth of piezoelectric and ferroelectric oxides by filling porous polymeric membranes. Both ALD and Pulsed Pressure CVD will be investigated for this purpose.

The InCVD common laboratory is a unique opportunity for Annealsys to enhance expertise in CVD/ALD processes and to provide applications data to company customers.

About Annealsys: designs, builds and manufactures systems for Research and Development and small scale production. Founded in 2004, Annealsys is a leading supplier of Rapid Thermal Processing (RTP) systems and a leader and pioneer for Direct Liquid Injection MOCVD/ALD machines.

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