ANEXA 1.A

Annual Summary Document
~sept. 2016- sept. 2017~

1. Cover Page (1 page):

- Group list (physicists, staff, postdocs, students);

Nr. crt	Name	Role in the project	OBS
Project coordinator: UVT			
1	*Vizman Daniel*	Director	physicist
2	Nicoara Irina	Researcher	physicist
3	Paulescu Marius	Researcher	physicist
4	Stef Marius	Researcher	physicist
5	Bunoiu Madalin	Researcher	physicist
6	Popescu Alexandra	Researcher	physicist
7	Buse Gabriel	Asist. Researcher	physicist
8	Panica Silviu	Asist. Researcher	Post-Doc
9	Tatomirescu Dragos	Asist. Researcher	PhD student
10	Sabadus Andreea	Asist. Researcher	Master student
11	Ivanovici Delia	Financial Responsible	Staff
12	Sarbu Ion	Technician	Staff
Partner 1: IFIN-HH			
13	Florin Negoita	Researcher	Physicist
14	Marius Gugiu	Researcher	Physicist
15	Cristian Manailescu	Asist. Researcher	Post-Doc
16	Ming Zeng	Asist. Researcher	Post-Doc
17	Negut Daniel C-tin	Researcher	Physicist
18	Cutrubinis Mihalis	Researcher	Physicist
19	Moise ioan Valentin	Researcher	Physicist

- Specific scientific focus of group is on the high energy radiation effects on some fluoride and semiconducting crystals
- Summary of accomplishments in the last year.

In the frame of objective *O1: Investigation of gamma radiation effects on the rare earth doped fluoride crystals* were performed the activities:

1. *A1.1 Optimization of crystal growth process (UVT)*
2. *A1.2 Preparing the gamma irradiation experiments (IFIN-HH)*
3. *A1.3 Growth of pure CaF_2 and BaF_2 crystals (UVT)*
4. *A1.4 Gamma irradiation of pure CaF_2 and BaF_2 crystals (IFIN-HH)*

In the frame of objective *O2: Optimization of the gamma flux production obtained via laser interaction through numerical simulations* were performed the activities:

1. *A2.1 Adaptation of the PIC code EPOCH on the IBM BlueGene/P super-computer and comparison with the PICLS code for electron acceleration (UVT)*
2. *A2.2 Scaling analysis for EPOCH on two clusters (UVT BG/P and IFIN cluster) (IFIN-HH)*
3. *A2.3 Numerical study for electron acceleration from CO2 and N2 gas targets. Optimizations for different laser spot sizes and plasma densities (IFIN-HH)*

In the frame of objective *O3: Optimization of large-flux proton beams generated via laser interaction through numerical simulations:*

1. *A3.1 Parametric numerical study for laser proton acceleration from gas and foam targets using the PICLS code. (UVT)*

In the frame of objective *O4: Investigation of proton irradiation effect on solar cells operation* were performed the activities:

1. *A4.1 Preparing the proton irradiation experiments (IFIN-HH)*
2. *A4.2 Preparing the experimental setup for characterizing the solar cells and the probes (UVT)*
3. *A4.3 Mono-junction solar cells irradiation with protons (IFIN-HH)*

2. Scientific accomplishments (max. 3 pages) – Results obtained during the reporting period.

Activity 1.1: Optimization of crystal growth process (UVT)

An important component in the crystal growth set-up is the **heating system** that provides the necessary melting temperature of the material and the gradient of temperature. In order to obtain a higher power stability the electronic system was replaced with a new one which can ensure a better voltage adjusting in order to achieve an appropriate temperature gradient for higher quality crystals. The electronic system contains a variable AC power source with external power reference (signal 4-20 mA) and ultra-fast fuses. Besides the variable power source having above specified features, the electronic system contains: 1. a digital temperature controller for temperature measurement with *S*-type thermocouple and 2. asoftware SCADA-PC type which allows the control and monitoring of electrical power.

Activity 1.2. Preparing the gamma irradiation experiments (IFIN-HH)

For the gamma irradiation experiments using the Co-60 gamma source of IRASM facility in IFIN-HH, the main objective of this phase was to determine, by dozimetric mapping, various irradiation geometries for rare earth doped MeF2 crystals (Me=Ca, Ba). We searched for irradiation geometries for which the dose rate vary with at least one order of magnitude in order to evaluate its effect, and at the same time, to fulfill the condition that the uniformity of the absorbed radiation dose, defined as Dmax/Dmin, is less than 1.05. At this stage we have identified some areas inside our irradiation chamber of the SVST Co-60 irradiator, which allow simultaneous irradiation of several crystal samples with a better uniformity of the absorbed radiation dose than the recommended value of 1.05. The minimum value of the average radiation dose at which the probes can be exposed for the two selected irradiation geometries is 20 Gy. Doses of 100Gy-10kgy can be obtained with our both irradiators, GC-5000 and SVST Co-60/B. Higher doses, up to 1000 kGy, can also be obtain in a useful period of time with the GC-5000 irradiators only for high rates.

Activity 1.3. Growth of pure CaF_2 and BaF_2 crystals. Using the new power stabilizer (see A1.1) 7 growth processes of pure CaF_2 and BaF_2 crystals have been performed. Before growing the crystals, some other experiments have been performed in order to achieve the optimum temperature distribution along the heater to establish the crucible position for crystal growth process (Fig. 1a). Figure 1b shows the grown CaF_2 and BaF_2 crystals.

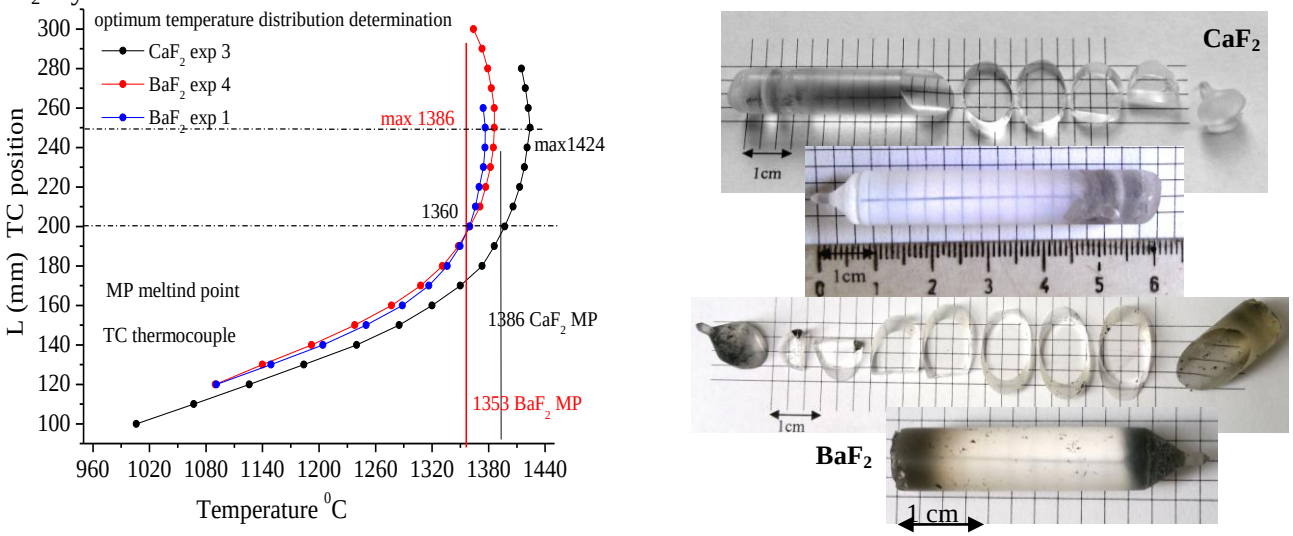


Figure 1. a. Temperature profile in the heater; b. CaF_2 and BaF_2 crystals

A1.4 Gamma irradiation of the pure CaF2 and BaF2 crystals (IFIN-HH)

In order to establish the useful absorbed dose range in studying the radiation hardness of fluoride crystals, "screening" irradiations were performed using a GC-5000 (B.R.I.T., India) gamma (Co-60) research irradiator. Two samples of Ca/BaF_2 have been incrementally irradiated in the range 100 Gy – 100 kGy using a dose rate of 4 kGy/h. The irradiations were performed in air and the temperature during irradiation, as measured in air in the irradiation chamber, varied from 22 to 33 °C. Absorbed dose was evaluated by means of an ethanol-chlorobenzene (ECB) dosimetry system with traceability at NPL (UK) via HDRL (DTU, Denmark). Preliminary results (optical spectroscopy) suggest the following dose ranges for radiation hardness testing of crystals: CaF_2: 20 - 5.000 Gy; BaF_2: 500 – 100.000 Gy;

Activity 2.1 Adaptation of the PIC code EPOCH on the IBM BlueGene/P super-computer and comparison with the PICLS code for electron acceleration (UVT)

The numerical simulations comprised in this research project will be carried out using PIC (Particle-in-Cell) codes (PICLS [Sentoku, Y. et al., J. Comput. Phys. 227, 6846 (2008)] and EPOCH [Ridgers, C. P. et al., J. Comput. Phys. 260, 273–285 (2014)]). The PICLS code was previously compiled and run successfully on the IBM BlueGene/P supercomputer. In the case of the EPOCH code, due to the particular architecture of the BlueGene/P, several adaptations had to be performed to ensure the successful compilation of the code. In order to test the accuracy of both chosen PIC codes, a test scenario was devised with the same parameters. The test case was laser wake field acceleration, in a 200x200 μm moving window, with a 0.8 μm wavelength Gaussian electromagnetic wave, linearly polarized. The obtained results are represented in Figure 2.

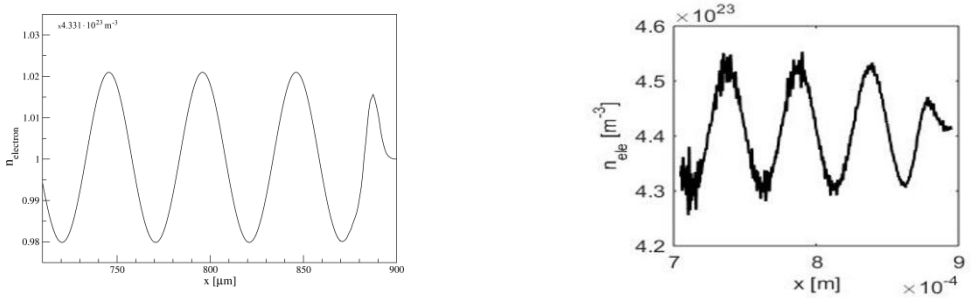
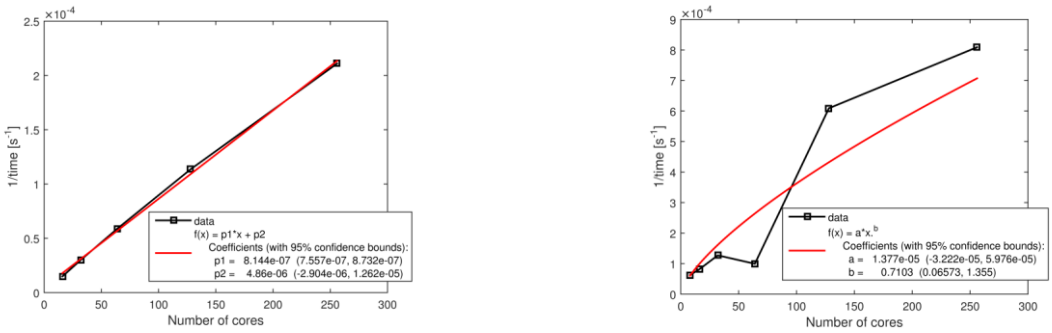


Figure 2. Simulation results from PICLS1D(left) and EPOCH1D(right)

From these figures, it can be seen that the electron density for the two simulations follow the same trends on both simulation software used in this test, although we can observe a higher quality output smoothing being done in the PICLS code.

Activity 2.2: Scaling analysis for EPOCH on two clusters (UVT BG/P and IFIN-HH cluster) (IFIN-HH). A scaling analysis study was carried out for the EPOCH code on two machines, the IBM BlueGene/P at UVT and IFIN-HH cluster.The time efficiency of the test scenario chosen for the scaling analysis study on the two machines under use in this project can be seen in Fig.3. Despite the fact that the simulations on the IFIN-HH cluster are having a better time efficiency, due to the limited number of cores available on the IFIN cluster, and the unreliability in run-time estimation, the BlueGene/P machine is better suited for EPOCH simulations, showing better scalability of BlueGene.



c) EPOCH2D efficiency on the IBM BlueGene/P d) EPOCH2D efficiency on the IFIN-HH cluster

Figure 3. Efficiency graphs for the both codes.

A2.3 Numerical study for electrons acceleration from CO2 and N2 gaseous target. Optimizations for different laser spot values and plasma densities (IFIN-HH)

The potential for generating a high-flux electron beam using a petawatt-level laser pulses in laser weak field acceleration (LWFAs) with a three-dimensional particle in cell simulation method was study. We have studied the charge particle production at petawatt level LWFAs with single Gaussian profile laser beams. We found that there is a threshold laser peak power P_{th} for laser beam confinement, and P_{th} is related to the plasma density. We also found that the cases with laser peak power equal to P_{th} have the most efficient charge injection, and thus can produce the optimal output beam flux. Approximately 10 to 1000 nanocoulomb of charge can be produce by the LWFA with a single petawatt laser pulse.

A3.1: Parametric numerical study for laser ion acceleration from gas and foam targets using the PICLS code(UVT)

This part of the project benefits from the development of novel high-pressure, shaped gas jets (Figure 4.). Using such targets (instead of plasmas created by vaporizing solids using a laser) is a critical step for enabling applications at high repetition. It has been shown that tailored, high-density plasma profiles produced from such gas jets can bear accelerating shocks leading to peaked energy distributions and angularly narrow ion beams, qualities that are in contrast with the ones displayed by ion beams produced by standard surface acceleration schemes. The purpose of the objective is devoted to optimize this acceleration scheme, notably by feeding these gas jets with gases of heavy atoms (Ar, Xe, CO2) in order to produce heavy ions at high fluxes by lasers. To this end, a parametric simulations study has been initiated for target densities between 2.5 n_c and 4.5 n_c using Ar and Xe $\cos^2$ gas profiles. The laser pulse used in the simulations has a Gaussian profile with an intensity of 10^{22} W/cm^2 at a wavelength of λ_μ=1000nm, a spot size of 5 μm and a period of τ=3.3 fs. The simulations are currently underway on the CINES (Centre Informatique National de l'Enseignement Supérieur) cluster using a parallelized version of the PICLS code. The results are expected to be obtained in about two weeks.

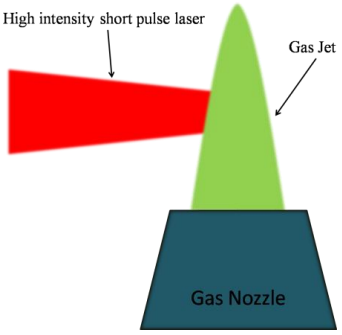


Figure 4. Target configuration for near-critical simulations

Activity 4.1. Preparing the proton irradiation experiments (IFIN-HH)

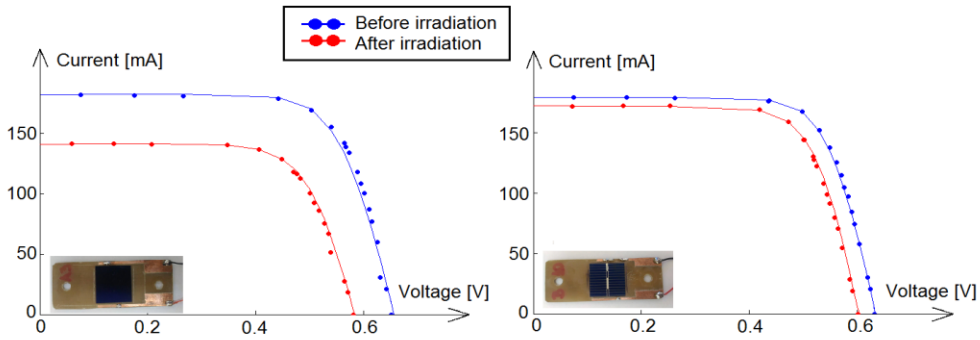
The solar cell proton irradiation experiments has been prepared mainly through the development of a remote control irradiation set-up at one of the beam lines of Tandem accelerator in IFIN-HH. The set-up consisted in a two axes linear translation stages working in vacuum on which the sample can be mounted together with on-line diagnostics for beam dimensions visualization (phosphor screen coupled to a CCD camera operated in vacuum) and beam intensity (faraday cage coupled to an ampermeter). Defocusing of the proton beam provided by the accelerator and sample movement during irradiation are solution for achieving a uniform dose distribution over the cell surface. The possibility to perform proton irradiation at a laser facilities was studied during an experiment performed at LULI facility, aiming to develop a method to monitor the laser accelerated proton flux based on nuclear isomer activation.

A4.2 Preparing the experimental setup for characterizing the solar cells and the probes(UVT)

At the PV Laboratory of UVT an experimental setup for measuring the solar cells current-voltage (I-V) characteristics under AM0 spectrum was developed within the framework of E13/2014-RO-CERN-Programme. Activity II.4.2 was tailored to extend the capability of the experimental setup to measure the spectral characteristics of the solar cell. For this a high-resolution fiberized microspectrometer AvaSpec-ULS3648 StarLine USB was purchased. The acquisition procedures are completed and the microspectrometer will be delivered by September, and then it will be integrated into the experimental setup.

A4.3 Mono-junction solar cells irradiation with protons (IFIN-HH)

Ten samples of 380.25 mm^2 was prepared from two high-efficiency silicon solar cells (one of n-type and another of p-type). The probes were irradiated with protons(11.5 MeV) at the linear accelerator TANDEM at IFIN-HH. At the cell surface this energy was about 3.5 MeV. Different levels of proton fluences were set, corresponding to the following exposure time: 10, 100 1000 and 7200 seconds. The solar cells were characterized under standard AM0 solar flux at the PV Laboratory of UVT. This is illustrated in the figure below where the I-V characteristics of two samples (n-type left and p-type right), before and after irradiation, are presented



The irradiation of the solar cell with protons causes a decrease of the short circuit current and of the open circuit voltage, resulting in a degradation of the cell conversion efficiency. The protons impact cause an increase of the recombination centers number, leading to a decrease of the lifetime of the minority carriers. The p-type solar cells show a lower degradation of the performances than the n-type solar cell.

3. Group members (table):

- List each member, his/her role in project and the Full Time Equivalent (FTE) time in project. The FTE formula to be used is: FTE = Total number of worked hours /Total number of hours per reporting period*;

Nr. crt	Name	Role in the project	Worked hours	Full Time Equivalent
Project coordinator: UVT				
1	*Vizman Daniel*	Director	129	0.06
2	Nicoara Irina	Researcher	100	0.05
3	Paulescu Marius	Researcher	100	0.05
4	Stef Marius	Researcher	160	0.08
5	Bunoiu Madalin	Researcher	48	0.02
6	Popescu Alexandra	Researcher	100	0.05
7	Buse Gabriel	Asist. Researcher	0	0
8	Panica Silviu	Asist. Researcher	108	0.05
9	Tatomirescu Dragos	Asist. Researcher	248	0.12
10	Sabadus Andreea	Asist. Researcher	152	0.07
11	Ivanovici Delia	Financial Responsible	90	0.04
12	Sarbu Ion	Technician	232	0.11
Partner 1: IFIN-HH				
13	Florin Negoita	Researcher	512	0.25
14	Marius Gugiu	Researcher	60	0.03
15	Cristian Manailescu	Asist. Researcher	2379	1.17
16	Ming Zeng	Asist. Researcher	0	0
17	Negut Daniel C-tin	Researcher	0	0
18	Cutrubinis Mihalis	Researcher	0	0

- List PhD/Master students and current position/job in the institution.

Nr. crt	Name	Position in the university	Obs.
1	Tatomirescu Dragos	Asist. Researcher	PhD student
2	Sabadus Andreea	Asist. Researcher	Master student

4. Deliverables in the last year related to the project:

- List of papers (journal or conference proceeding);

  There are two journal papers and two conference proceedings in preparation.

* Total number of hours (for a certain period) = 170 average monthly hours x number of months (e.g., for a full year: 170 hours/month x 12 months = 2040 hours)

- List of talks of group members (title, conference or meeting, date);

1. **TIM17 Physics Conference, TIMISOARA (ROMANIA), 22/05/2017 - 28/05/2017,** *Dragos Tatomirescu, Alexandra Popescu, Emmanuel d'Humières and Daniel Vizman* - Improving the Particle Beam Characteristics Resulted from Laser Ion Acceleration at Ultra High Intensity through Target Manipulation *(oral presentation)*
2. **European Physical Society Conference, BELFAST (NORTHERN IRELAND), 26/06/2017 - 30/06/2017,** *Dragos Tatomirescu, Emmanuel d'Humières and Daniel Vizman* - Target curvature influence on particle focusing and maximum energy in laser-plasma acceleration at ultra high intensity *(poster)*
3. **TIM17 Physics Conference, TIMISOARA (ROMANIA), 22/05/2017 - 28/05/2017**", A. Sabadus, V. Mihailetchi, M. Paulescu - *Parameters Extraction for the One-Diode Model of a Solar Cell*", (oral presentation)
4. **The 9th International Conference on Advanced Materials, ROCAM,Bucharest, 11-14 July 2017,** A. Sabadus, D. Vizman, F. Negoiță, C. Manailescu, M. Paulescu - "*Proton Irradiation Effects on Solar Cells Characteristics*" (poster presentation)
5. **TIM17 Physics Conference, TIMISOARA (ROMANIA), 22/05/2017 - 28/05/2017**", **M. Stef**, I. Nicoara, G. Buse, S. Kis, *Spectroscopic properties of YbF_3 doped (Ba/Ca)F_2 crystals before and after x-ray irradiation*
6. **17th International Balkan Workshop on Applied Physics and Materials Science IBWAP 2017 (11-14, July, 2017),** M. Stef, I. Nicoara, G. Buse, S. Kis - *Influence of electron irradiation on the Yb^{3+}/Yb^{2+} charge conversion in the CaF_2:YbF_3 crystals*

1. Other deliverables (patents, books etc.).

5. Further group activities (max. 1 page):

- Collaborations, education, outreach.

Dragos Tatomirescu is doing a PhD thesis on Particle-In-Cell simulations of high intensity laser plasma interaction with a double coordination : Prof.dr. Daniel Vizman, West University of Timisoara and Associate Professor Emmanuel d'Humières, Centre Lasers Intenses et Applications, CELIA, University of Bordeaux, France.

Research internship

- Dragos Tatomirescu - Research internship (8 months) on Particle-In-Cell simulations of high intensity laser plasma interaction at Centre Lasers Intenses et Applications, CELIA, Bordeaux, France under the supervision of Associate Professor Emmanuel d'Humières. The scope of the visit was also to strengthen the scientific collaboration with the PICLS software development group at University of Bordeaux.

Summer School and Courses

1. **Dragos Tatomirescu, CERN - SEENET-MTP PhD Training Program in High Energy Physics**, TIMISOARA (ROMANIA), 11/12/2016 - 17/12/2016;
2. **Dragos Tatomirescu, PATC course Parallel filesystems and parallel IO libraries**, SACLAY (FRANCE), 06/03/2017 - 07/03/2017;
3. **Dragos Tatomirescu, International Summer School on Crystal Growth and Advanced Materials for Energy Conversion**, BUCHAREST (ROMANIA), 10/07/2017 -15/07/2017;
4. **Andreea Sabadus, International Summer School on Crystal Growth and Advanced Materials for Energy Conversion**, BUCHAREST (ROMANIA), 10/07/2017 -15/07/2017;

5. **Dragos Tatomirescu, 2nd edition of the ELI Summer School (ELISS 2017)**, BRASOV (ROMANIA), 27/08/2017 - 01/09/2017

6. Financial Report (budget usage) for the reporting period (see the Annex).

7. Research plan and goals for the next year (max. 1 page).

In the frame of objective *O1: Investigation of gamma radiation effects on the rare earth doped fluoride crystals* will be performed the next activities:

1. *A1.5 Characterization of CaF_2 and BaF_2 crystals before / after irradiation (UVT)*
2. *A1.6 Growth of various YbF_3 and ErF_3 concentrations doped CaF_2 crystals (UVT)*
3. *A1.7 Gamma irradiation of YbF_3 and ErF_3 doped CaF_2 crystals (IFIN-HH)*
4. *A1.8 Characterization of YbF_3 and ErF_3 doped CaF_2 crystals before and after irradiation. (UVT)*

In the frame of objective *O2: Optimization of the gamma flux production obtained via laser interaction through numerical simulations* will be performed the next activities:

1. *A2.4 Numerical study for electron acceleration from Ar and He gas targets. Optimizations for different laser spot sizes and plasma densities. (IFIN-HH)*

In the frame of objective *O3: Optimization of large-flux proton beams generated via laser interaction through numerical simulations* will be performed the next activities:

1. *A3.2 Parametric numerical study for laser proton acceleration from micro-structured targets using the PICLS code. (UVT)*

In the frame of objective *O4: Investigation of proton irradiation effect on solar cells operation* were performed the activities:

1. *A4.4 Numerical models for irradiated mono-junction solar cells. Development, testing, calibration and validation (UVT)*
2. *A4.5 Triple-junction solar cells irradiation with protons (IFIN-HH)*

Annex

Financial Report (whole Project)
according to the regulations from H.G. 134/2011

			lei
Type of expenditures		**Year 2016**	
		Value	
		Planned	**Realized**
1	**PERSONNEL EXPENDITURES**, from which:	**70.068,00**	**68.081,00**
	1.1. wages and similar income, according to the law	55.658,00	55.533,00
	1.2. contributions related to wages and assimilated incomes	14.410,00	12.548,00
2	**LOGISTICS EXPENDITURES**, from which:	**3.012,96**	**0,00**
	2.1. capital expenditures	0,00	0,00
	2.2. stocks expenditures	3.012,96	0,00
	2.3. expenditures on services performed by third parties, including:	0,00	0,00
	....	0,00	0,00
3	**TRAVEL EXPENDITURES**	**2.575,00**	**7.008,68**
4	**INDIRECT EXPENDITURES – (OVERHEADS) (UVT: 27% from (1.1+1.2+2.2+2.3+3); IFIN-HH 50%: 15% from (1.1+1.2) + 35% from direct costs (minus capital expenditures))**	**25.126,04**	**25.692,00**
TOTAL EXPENDITURES *(1+2+3+4)*		**100.782,00**	**100.782,00**

* Specify the rate (%) and key of distribution (excluding capital expenditures).
To be filled in for:
- the project leader;
- for each of the partners (if any);
- for the whole project.

Financial Report (Project coordinator UVT)
according to the regulations from H.G. 134/2011

			lei
Type of expenditures		**Year 2016**	
		Value	
		Planned	**Realized**
1	**PERSONNEL EXPENDITURES**, from which:	**46.025,00**	**46.868,00**
	1.1. wages and similar income, according to the law	37.560,00	38.266,00
	1.2. contributions related to wages and assimilated incomes	8.465,00	8.602,00
2	**LOGISTICS EXPENDITURES**, from which:	**1.000,00**	**0,00**
	2.1. capital expenditures	0,00	0,00
	2.2. stocks expenditures	1.000,00	0,00
	2.3. expenditures on services performed by third parties, including:	0,00	0,00
	....	0,00	0,00
3	**TRAVEL EXPENDITURES**	**2.575,00**	**1.850,00**
4	**INDIRECT EXPENDITURES – (OVERHEADS) (UVT: 27% from (1.1+1.2+2.2+2.3+3))**	**12.400,00**	**13.281,40**
TOTAL EXPENDITURES *(1+2+3+4)*		**62.000,00**	**62.000,00**

* Specify the rate (%) and key of distribution (excluding capital expenditures).

Financial Report (Partner 1 IFIN-HH)
according to the regulations from H.G. 134/2011

			lei
Type of expenditures		**Year 2016**	
		Value	
		Planned	**Realized**
1	**PERSONNEL EXPENDITURES**, from which:	**24.043,00**	**21.213,00**
	1.1. wages and similar income, according to the law	18.098,00	17.267,00
	1.2. contributions related to wages and assimilated incomes	5.945,00	3.946,00
2	**LOGISTICS EXPENDITURES**, from which:	**2.012,96**	**0,00**
	2.1. capital expenditures	0,00	0,00
	2.2. stocks expenditures	2.012,96	0,00
	2.3. expenditures on services performed by third parties, including:	0,00	0,00
	....	0,00	0,00
3	**TRAVEL EXPENDITURES**	**0,00**	**5.158,08**
4	**INDIRECT EXPENDITURES – (OVERHEADS) (IFIN-HH 50%: 15% from (1.1+1.2) + 35% from direct costs (minus capital expenditures))**	**12.726,04**	**12.410,92**
TOTAL EXPENDITURES *(1+2+3+4)*		**38.782,00**	**38.782,00**

* Specify the rate (%) and key of distribution (excluding capital expenditures).
To be filled in for:
- the project leader;
- for each of the partners (if any);
- for the whole project.

Financial Report (whole Project)
according to the regulations from H.G. 134/2011

			lei
Type of expenditures		**Year 2017**	
		Value	
		Planned	**Realized**
1	**PERSONNEL EXPENDITURES**, from which:	**244.003,00**	**175.766,00**
	1.1. wages and similar income, according to the law	198.876,00	143.235,00
	1.2. contributions related to wages and assimilated incomes	45.127,00	32.531,00
2	**LOGISTICS EXPENDITURES**, from which:	**100.000,00**	**71.043,55**
	2.1. capital expenditures	85.000,00	63.207,88
	2.2. stocks expenditures	15.000,00	7.835,67
	2.3. expenditures on services performed by third parties, including:	0,00	0,00
	....	0,00	0,00
3	**TRAVEL EXPENDITURES**	**16.042,00**	**17.295,05**
4	**INDIRECT EXPENDITURES – (OVERHEADS) (UVT: 27% from (1.1+1.2+2.2+2.3+3); IFIN-HH 50%: 15% from (1.1+1.2) + 35% from direct costs (minus capital expenditures))**	**99.073,00**	**77.657,68**
TOTAL EXPENDITURES *(1+2+3+4)*		**459.118,00**	**341.762,28**

* Specify the rate (%) and key of distribution (excluding capital expenditures).
To be filled in for:
- the project leader;
- for each of the partners (if any);
- for the whole project.

Financial Report (Project coordinator UVT)
according to the regulations from H.G. 134/2011

			lei
Type of expenditures		**Year 2017**	
		Value	
		Planned	**Realized**
1	**PERSONNEL EXPENDITURES**, from which:	**123.958,00**	**66.032,00**
	1.1. wages and similar income, according to the law	101.160,00	53.912,00
	1.2. contributions related to wages and assimilated incomes	22.798,00	12.120,00
2	**LOGISTICS EXPENDITURES**, from which:	**100.000,00**	**71.043,55**
	2.1. capital expenditures	85.000,00	63.207,88
	2.2. stocks expenditures	15.000,00	7.835,67
	2.3. expenditures on services performed by third parties, including:	0,00	0,00
	....	0,00	0,00
3	**TRAVEL EXPENDITURES**	**13.042,00**	**17.295,05**
4	**INDIRECT EXPENDITURES – (OVERHEADS) (UVT: 27% from (1.1+1.2+2.2+2.3+3))**	**38.000,00**	**22.790,68**
TOTAL EXPENDITURES *(1+2+3+4)*		**275.000,00**	**177.161,28**

* Specify the rate (%) and key of distribution (excluding capital expenditures).

Financial Report (Partner 1 IFIN-HH)
according to the regulations from H.G. 134/2011

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Type of expenditures		**Year 2017**	
		Value	
		Planned	**Realized**
1	**PERSONNEL EXPENDITURES**, from which:	**120.045,00**	**109.734,00**
	1.1. wages and similar income, according to the law	97.716,00	89.323,00
	1.2. contributions related to wages and assimilated incomes	22.329,00	20.411,00
2	**LOGISTICS EXPENDITURES**, from which:	**2.012,96**	**0,00**
	2.1. capital expenditures	0,00	0,00
	2.2. stocks expenditures	2.012,96	0,00
	2.3. expenditures on services performed by third parties, including:	0,00	0,00
	....	0,00	0,00
3	**TRAVEL EXPENDITURES**	**3000,00**	**0,00**
4	**INDIRECT EXPENDITURES – (OVERHEADS) (IFIN-HH 50%: 15% from (1.1+1.2) + 35% from direct costs (minus capital expenditures))**	**61.073,00**	**54.867,00**
TOTAL EXPENDITURES *(1+2+3+4)*		**184.118,00**	**164.601,00**

* Specify the rate (%) and key of distribution (excluding capital expenditures).
To be filled in for:
- the project leader;
- for each of the partners (if any);
- for the whole project.