MINISTERUL EDUCAȚIEI NAȚIONALE
ȘI CERCETĂRII ȘTIINȚIFICE

UEFISCDI UNITATEA EXECUTIVĂ PENTRU FINANȚAREA ÎNVĂȚĂMÂNTULUI SUPERIOR, A CERCETĂRII, DEZVOLTĂRII ȘI INOVĂRII

PLANUL NAȚIONAL DE CERCETARE, DEZVOLTARE ȘI INOVARE 2015-2020, PNIII

P4 Cercetare fundamentală și de frontieră

Proiecte de cercetare "ERC - like"

Pachet de informații
2016

CUPRINS

Proiecte de cercetare „ERC – like"

Identificator: PN-III-ID-ERC-2016-1

1. Scop:

Identificarea şi susţinerea cercetătorilor români cu rezultate excelente obţinute în competiţiile organizate de European Research Council (ERC) în anii 2014, 2015 şi 2016, în vederea afirmării prestigiului cercetării ştiinţifice din România la nivel internaţional.

2. Obiective

- obţinerea unor rezultate ştiinţifice de excelenţă reflectate în creşterea numărului de publicaţii cu înalt impact internaţional, precum şi în creşterea numărului de invenţii brevetate, aplicate în economie;
- creşterea capacităţii de a candida cu succes la următoarele competiţii organizate de ERC;
- implementarea principiului "finanţarea urmează performanţa" în cercetare.

3. Criterii de eligibilitate:

- **directorul de proiect**, *cercetător român*, împreună cu *o instituţie gazdă din România*, a participat, în calitate de PI (Principal Investigator), la una din competiţiile organizate de ERC în 2014, 2015 şi 2016 (*Starting Grant, Consolidator Grant* sau *Advanced Grant*);
- directorul de proiect poate beneficia o singură dată de finanţare pentru un proiect de tip „ERC - like";
- este interzisă depunerea de proiecte care au în vedere activităţi deja finanţate sau în curs de finanţare din alte surse, naţionale sau internaţionale;
- **instituţia gazdă** se încadrează în definiţia organizaţiei de cercetare conform Cadrului Comunitar pentru Ajutor de Stat de Cercetare Dezvoltare şi Inovare;
- instituţia gazdă nu este declarată, conform legii, în stare de incapacitate de plată; nu are conturile blocate conform unei hotărâri judecătoreşti; nu a furnizat declaraţii inexacte cu privire la informaţiile solicitate de către UEFISCDI în vederea selectării contractanţilor; nu a încălcat prevederile unui alt contract de finanţare încheiat anterior.

4. Tip de finanţare acordată prin ERC-Like:

- ***Proiecte tip 1 – "Grant Suport" ("Support Grant"):***
  - proiecte care au obţinut *calificativul B în etapa a II-a de evaluare ERC* în competiţiile *Starting Grant / Consolidator Grant / Advanced Grant* (dovedesc doar întrunirea anumitor

criterii de excelenţă ERC şi nu au fost recomandate la finanţare în urma procesului de evaluare desfaşurat de ERC);

- finanţarea maximă acordată pentru un proiect de acest tip este de **750.000 lei / 2 ani**;
- directorul de proiect propune un proiect de cercetare, parte a cererii de finanţare depusă la ERC, corespunzător bugetului alocat din finanţare naţională.

- ***Proiecte tip 2 – "Grant de excelenţă" ("Excellence Grant "):***
  - proiecte care au obţinut *calificativul A în etapa a II-a de evaluare ERC* în competiţiile *Starting Grant / Consolidator Grant / Advanced Grant* (dovedesc întrunirea tuturor criteriilor de excelenţă, dar fondurile alocate nu au permis finanţarea acestora);
  - finanţarea maximă acordată pentru un proiect de acest tip este de:
    - 6.750.000 lei / 5 ani pentru un proiect din competiţia Starting Grant;
    - 9.000.000 lei / 5 ani pentru un proiect din competiţia Consolidator Grant ;
    - 11.250.000 lei / 5 ani pentru un proiect din competiţia Advanced Grant;
  - bugetul şi perioada de implementare trebuie să corespundă cererii de finanţare evaluată de ERC şi să ţină cont de eventualele recomandări privind redimensionarea bugetului, specificate în fişa de evaluare ERC;
  - directorul de proiect va implementa proiectul conform cererii de finanţare depusă la ERC.

Cheltuieli eligibile:

- *cheltuieli cu personalul* (inclusiv contribuţiile legale aferente salariilor şi veniturilor asimilate acestora); pentru fiecare persoană, cheltuielile de personal, inclusiv contribuţiile aferente decontate în cadrul unui proiect, vor respecta prevederile HG 583/2015;
- *cheltuieli de logistică* necesare pentru derularea proiectului, inclusiv echipamente, consumabile de laborator, cheltuieli materiale, cheltuieli pentru diseminare, informare-documentare, acces la infrastructura de cercetare a terţilor etc.;
- *cheltuieli de deplasare* aferente deplasărilor în ţară sau în străinătate ale PI şi membrilor echipei, pentru stagii de documentare sau cercetare, participări la manifestări ştiinţifice de prestigiu din domeniul proiectului; se pot finanţa şi cheltuieli de deplasare ale unor colaboratori din ţară sau din străinătate sau ale unor participanţi la manifestările ştiinţifice organizate în cadrul proiectului;
- *cheltuieli indirecte* (regie) - cheltuielile indirecte se calculează ca procent din cheltuielile directe: cheltuieli cu personalul, cheltuieli de logistică (exceptând valoarea cheltuielilor cu echipamentele şi subcontractarea) şi cheltuieli de deplasare. Cheltuielile indirecte nu vor depăşi 15% din valoarea cheltuielilor directe.

Bugetul competiţiei 2016-2018: max. 20.000.000 lei,

- din care în 2016 - 2.000.000 lei.

5. Durata:

- maximum 24 luni pentru Tipul 1 de proiecte;
- maximum 60 luni pentru Tipul 2 de proiecte.

6. Etica:

Directorul de proiect are obligaţia să se asigure că cererea de finanţare respectă normele prevăzute de Legea nr. 206/2004 privind buna conduită în cercetarea ştiinţifică, dezvoltarea tehnologică şi inovare, cu modificările şi completările ulterioare, precum şi de alte reglementări legislative de etică specifice domeniului de cercetare al proiectului. De asemenea, în situaţia în care domeniul proiectului necesită obţinerea de avize şi acreditări specifice, directorul de proiect se va asigura de obţinerea acestora anterior depunerii cererii de finanţare.

7. Egalitatea de şanse

Egalitatea de şanse, precum şi egalitatea de gen va fi asigurată pentru toţi participanţii, la implementarea programului, cât şi la nivel de proiect. Aplicanţii trebuie să ia toate măsurile pentru egalitatea de şanse între bărbaţi şi femei în elaborarea şi implementarea proiectului. Acestea trebuie să vizeze, în măsura în care este posibil, un echilibru între femei şi bărbaţi pentru toate posturile prevăzute în proiect, inclusiv la nivel de conducere.

8. Procedura de depunere, evaluare şi selecţie a cererilor de finanţare

Cererile de finanţare se depun într-o singură etapă în platforma web: www.uefiscdi-direct.ro şi se redactează în limba engleză conform *Anexei 1* şi *Anexei 2 – Cererea de finanţare, corespunzătoare fiecărui tip de proiect,* la prezentul Pachet de informaţii.

Cererea de finanţare trebuie să fie însoţită şi de cererea de finanţare (copie) depusă la ERC, precum şi de fişa de evaluare (copie) transmisă de ERC directorului de proiect.

De asemenea, se va ataşa declaraţia prin care instituţia gazdă acceptă implementarea proiectului, asigură sprijinul administrativ pentru proiect, asigură resursele indicate în cererea de finanţare, sprijină desfăşurarea proiectului în bune condiţii şi angajează membrii echipei proiectului, în condiţiile legii, conform propunerii de proiect, în cazul în care proiectul este finanţat. În cazul în

care proiectul prevede activităţi care vor respecta normele de etică, se vor depune şi documentele în acest sens.

8.1 Verificarea eligibilităţii

Cererile de finanţare sunt verificate de către personalul administrativ al UEFISCDI, pentru a se asigura că sunt îndeplinite criteriile de eligibilitate. Lista cu propunerile de proiecte eligibile va fi afişată pe site-ul web al UEFISCDI - www.uefiscdi.gov.ro.

8.2 Evaluarea

- ✓ Pentru proiectele de tip 1, la nivelul UEFISCDI se constituie un panel de experţi independenţi care analizează oportunitatea acordării finanţării. Rezultatul este de tip admis/respins.
- ✓ Pentru proiectele de tip 2, UEFISCDI nu organizează propria evaluare, iar decizia de finanţare se bazează exclusiv pe rezultatele procesului internaţional de evaluare organizat de ERC.

8.3 Publicarea rezultatelor: Lista cererilor de finanţare acceptate la finanţare va fi publicată pe pagina web UEFISCDI (www.uefiscdi.gov.ro).

9. Contractarea

Contractul de finanţare este multianual şi se semnează între UEFISCDI şi instituţia gazdă.

10. Principalele obligaţii ale părţilor:

Directorul de proiect

1. Răspunde de implementarea proiectului;
2. Întocmeşte şi transmite autorităţii contractante rapoarte de progres ştiinţific pe parcursul proiectului şi un raport final, la momentul şi în formatul stabilite de CNCS/UEFISCDI în contractul de finanţare. Termenele rapoartelor intermediare se propun de către directorul de proiect, în concordanţă cu planul de lucru prevăzut în cererea de finanţare;
3. Mediatizează activităţile şi anunţă poziţiile vacante în proiectul de cercetare (inclusiv pe site-urile www.ancs.ro/jobs şi www.euraxess.ro);
4. Asigură informaţii actualizate privind derularea proiectului pe o pagină web dedicată acestuia, în limba engleză;
5. Directorul de proiect certifică, prin propria declaraţie, nefinanţarea activităţilor propuse în proiect din alte surse (naţionale sau internaţionale).

Instituţia gazdă

1. Asigură accesul directorului de proiect la infrastructura de cercetare existentă şi îl sprijină administrativ pe acesta în implementarea proiectului;

2. Întocmeşte şi transmite autorităţii contractante raportările financiare ale proiectului, la finalul fiecărei etape de raportare financiară. Formatul raportărilor financiare este stabilit prin contractul de finanţare;
3. Instituţia din care face parte directorul de proiect, prin semnătura reprezentantului legal şi prin semnătura directorului de proiect certifică, pe propria răspundere, legalitatea şi corectitudinea informaţiilor cuprinse în cererea de finanţare, acceptă implementarea proiectului în cadrul instituţiei, asigură sprijinul administrativ pentru proiect, asigură resursele indicate în cererea de finanţare, se angajează să sprijine desfăşurarea proiectului în bune condiţii şi să angajeze membrii echipei proiectului, în condiţiile legii, conform propunerii de proiect, în cazul în care proiectul este finanţat.

UEFISCDI
Asigură finanţarea şi monitorizarea proiectului conform cadrului legal în vigoare.

11. Eşecul în cercetare
Eşecul în cercetare corespunde situaţiilor în care, în urma derulării corespunzătoare a activităţilor prevăzute într-un proiect de cercetare, cu obţinerea livrabilelor asumate conform contractului de finanţare, rezultatele obţinute nu concordă cu cele preliminate, ipotezele de lucru nu sunt confirmate, funcţionalitatea nu este validată.
Pentru un proiect aflat în derulare, eşecul în cercetare poate fi identificat de către comisii de evaluare şi monitorizare, constituite în acest scop de către Autoritatea Contractantă (conform prevederilor art. 87 din OG 57/2002, cu modificările şi completările ulterioare şi art. 13 din HG 583/2015 şi art. 1 pct. 17 din Anexa HG 583/2015).
În timpul evaluării şi monitorizării, comisiile vor determina dacă:
1. Echipa de cercetare a proiectului a respectat contractul de finanţare, desfăşurând cu bună credinţă activităţile prevăzute, chiar dacă rezultatele nu sunt cele estimate (aşteptate). Acest caz intră sub incidenţa riscului în cercetare;
2. Echipa de cercetare a proiectului a derulat neadecvat activităţile prevăzute în contractul de finanţare sau nu le-a realizat, fără să notifice Autoritatea Contractantă, asupra motivelor care au condus la această situaţie. În aceste condiţii, nerealizările sunt imputabile Contractorului, iar Autoritatea Contractantă poate solicita returnarea fondurilor utilizate necorespunzător.

Procesul de identificare şi certificare a situaţiilor ce se încadrează sub incidenţa riscului cercetării implică examinarea:
1. Modului de derulare a activităţilor în cadrul proiectului, în conformitate cu cererea de finanţare, anexă la contractul de finanţare (respectarea conţinutului şi a calendarului);
2. Modului de obţinere a rezultatelor (teoretice sau experimentale), inclusiv realizarea livrabilelor asociate obiectivelor/activităţilor, chiar dacă acestea diferă de cele estimate în cererea de finanţare;

3. Modalităţii de comunicare cu Autoritatea Contractantă în ceea ce priveşte neconcordanţele apărute între rezultatele obţinute pe parcursul proiectului şi cele prevăzute iniţial în cererea de finanţare.

În baza rapoartelor comisiilor de evaluare şi monitorizare, Autoritatea Contractantă acceptă eşecul în cerceatre, fără a exista obligativitatea recuperării fondurilor cheltuite de la bugetul de stat, pentru proiectele ale căror nerealizari sunt pentru activităţi/ipoteze desfăşurate corespunzător unor niveluri de maturitate tehnologică cuprinse între TRL 1 şi TRL 5/6, principii de bază descoperite şi formulate – validarea modelului de laborator, la scară redusă sau mărită, după caz, cu reproducerea prin similitudine a condiţiilor de funcţionare/validare a prototipului (sistemul la scară reală) într-un mediu relevant – condiţii de funcţionare similare celor reale.

Finanţarea unui proiect se întrerupe şi cota de finanţare alocată de la bugetul programului se restituie Autorităţii Contractante, în cazul în care comisiile de evaluare şi monitorizare constată că, din vina proprie a Contractorului, nu s-au realizat etapele/activităţile şi obiectivele prevăzute în planul de realizare pentru care s-a primit finanţarea. De asemenea, Contractorul returnează Autorităţii Contractante sumele cheltuite necorespunzător.

12. Calendarul competiţiei:

ACTIVITATE	TERMEN
Lansarea competiţiei	**25 aprilie 2016**
Depunerea cererilor de finanţare pentru competitiile 2014 si 2015	**03.05.2016**
Publicarea listei finale cu proiecte propuse pentru finanţare	**17.05.2016**
Contractarea	**05.06.2016**
pentru competiţiile 2016 depunerea se deschide pe masură ce ERC anunţă rezultatele.	

Note:

Cererile de finanţare se depun prin intermediul platformei web - www.uefiscdi-direct.ro, nefiind necesară depunerea şi în format tipărit.

Cererile de finanţare se încarcă pe platformă, în secţiunea dedicată, în **format .pdf textual** (exclus scanat).

Cererea de finanţare va fi însoţită de o **declaraţie pe propria răspundere a directorului de proiect** privind nefinanţarea activităţilor propuse în proiect din alte surse (naţionale sau internaţionale).

Cererea de finanţare trebuie să fie însoţită de o **declaraţie pe propria răspundere a instituţiei gazdă** în limba română (semnată de reprezentantul legal şi ştampilată) prin care se certifică acceptarea implementării proiectului în instituţie, asigurarea sprijinului administrativ, punerea la dispoziţia proiectului a infrastructurii necesare, angajamentul de a sprijini desfăşurarea proiectului în bune condiţii şi angajarea membrilor echipei de proiect, în condiţiile legii, conform propunerii de proiect, în cazul în care proiectul este finanţat. Această declaraţie se semnează, se scanează în format .pdf şi se încarcă pe platformă în secţiunea dedicată.

ANEXA 1 - Cerere de finanţare - Identificator: PN-III-ID-ERC-2016-1, proiecte de tip 1– Granturi Suport *(Support Grant)*

A. Informaţii generale

Titlul proiectului (max. 200 caractere):

Acronim (max. 20 caractere):

Competiţia ERC: 2014/2015/2016

Durata (în luni):

Rezumat (min. 100 / max. 2.000 de caractere):

Directorul de proiect:

Nume:
Nume anterioare (dacă este cazul):
Prenume:
Data naşterii:
Doctor din anul:
Telefon:
Adresa de e-mail:

Instituţia gazdă a proiectului:

Numele instituţiei:
Adresa instituţiei:

Domeniul în care se încadrează proiectul (conform ANEXA 4 – 4.1/4.2/4.3)

Domeniul:
Subdomeniul:
Aria de cercetare principală:
Aria de cercetare secundară:
Aria de cercetare secundară (opţional):

Cuvinte cheie:

1:
2:
3:
4 (opţional):
5 (opţional):

B. Cererea de finanțare depusă la ERC (se atașează copie după propunerea de proiect) și fișa de evaluare ERC.

C. Descrierea proiectului de cercetare *(max. 10 pagini în limba engleză)*

În acest capitol se va preciza, în detaliu, componenta din propunerea de proiect depusă la ERC ce urmează a fi implementată prin prezenta finanţare şi planul de lucru. *Descrierea proiectului de cercetare se va structura conform cerinţelor programului ERC.*

Notă:

Documentul foloseşte caractere Times New Roman de 12 puncte, spaţiere între linii de 1.5 şi margini de 2 cm. Numărul de pagini impus nu conţine şi referinţele bibliografice, acestea vor fi trecute pe pagini suplimentare. La fiecare secţiune se va menţine textul care marchează informaţiile şi secţiunile obligatorii ale cererii.

Deviz antecalcul (lei, pe ani calendaristici):
Se va specifica şi justifica solicitarea de buget pe tipuri de cheltuieli.

Capitol de buget (cheltuieli)	an 2016 (lei)	an 2017 (lei)	an 2018 (lei)	Total (lei)
Personal				
Logistică				
Deplasare				
Indirecte				
Total				

ANEXA 2 - Cerere de finanţare - Identificator: PN-III-ID-ERC-2016-2, proiecte de tip 2 – Granturi de Excelenţă (*Excellence Grant*)

A. Informaţii generale

Titlul proiectului (max. 200 caractere):

Acronim (max. 20 caractere):

Competiţia ERC: 2014/2015/2016

Durata (în luni):

Rezumat (min. 100 / max. 2.000 de caractere):

Directorul de proiect:

Nume:
Nume anterioare (dacă este cazul):
Prenume:
Data naşterii:
Doctor din anul:
Telefon:
Adresa de e-mail:

Instituţia gazdă a proiectului:

Numele instituţiei:
Adresa instituţiei:

Domeniul în care se încadrează proiectul (conform Anexa 4 – 4.1/4.2/4.3)

Domeniul:
Subdomeniul:
Aria de cercetare principală:
Aria de cercetare secundară:
Aria de cercetare secundară (opţional):

Cuvinte cheie:

1:
2:
3:
4 (opţional):
5 (opţional):

B. Cererea de finanţare depusă la ERC (se ataşează copie după propunerea de proiect) şi fişa de evaluare. Directorul de proiect va implementa proiectul conform acestei cereri de finanţare.

Deviz antecalcul (lei, pe ani calendaristici):
Se va specifica şi justifica solicitarea de buget pe tipuri de cheltuieli.

Capitol de buget (cheltuieli)	2016 (lei)	2017 (lei)	2018 (lei)	2019 (lei)	2020 (lei)	2021 (lei)	Total (lei)
Personal							
Logistică							
Deplasare							
Indirecte							
Total							

ANEXA 3 – Fişă de evaluare – pentru tipul 1 de proiecte

Va conţine două criterii de evaluare :

1. Calitatea ştiinţifică a directorului de proiect

- evaluarea se face pe baza documentaţiei depuse la ERC, respectiv la punctul B din ANEXA 1, precum şi a fişei de evaluare ERC.

2. Calitatea ştiinţifică şi fezabilitatea propunerii de proiect

- se evaluează componenta de proiect din propunerea ERC ce urmează a fi finanţată din fonduri naţionale (evaluarea se face pe baza documentaţiei depuse la punctul C din ANEXA 1).

Rezultatul este de tip admis/respins la finanţare.

ANEXA 4 – Domenii științifice ERC

ANEXA 4.1 – Domenii științifice ERC – 2014

Domain Code:	**SH**
Subdomain Code:	**SH1, SH2, SH3, SH4, SH5, SH6**
Research Area Code:	**SH1_1...SH1_15, SH2_1...SH2_10,.....**

DOMAIN
SOCIAL SCIENCES AND HUMANITIES

SH1	**Markets, Individuals and Institutions:** Economics, finance and management
SH1_1	Macroeconomics; monetary economics
SH1_2	International trade, international business, development, economic growth
SH1_3	Econometrics, game theory, experimental design, operations research
SH1_4	Labour economics; institutional economics
SH1_5	Political economy, public economics
SH1_6	Microeconomics, behavioural economics
SH1_7	Industrial organisation
SH1_8	Strategy; entrepreneurship
SH1_9	Technological change, innovation, research & development
SH1_10	Financial markets, asset prices, international finance
SH1_11	Banking, corporate finance, accounting, auditing, insurance
SH1_12	Marketing
SH1_13	Management; operations management
SH1_14	Organisational behaviour; human resource management
SH1_15	History of economic thought, quantitative economic history
SH2	**The Social World, Diversity and Common Ground:** Sociology, social anthropology, political science, law, communication, science and technology studies
SH2_1	Social structure, inequalities, social mobility
SH2_2	Diversity and identities, gender, interethnic relations
SH2_3	Social policies, welfare and educational systems
SH2_4	Democratisation, social movements, social integration
SH2_5	Political systems and institutions, governance
SH2_6	Conflict and conflict resolution, violence
SH2_7	Legal studies, constitutions, human rights, comparative law
SH2_8	International relations, global and transnational governance
SH2_9	Communication and information, networks, media
SH2_10	Social studies of science and technology
SH3	**Environment, Space and Population:** Sustainability science, demography, geography, regional studies and planning
SH3_1	Sustainability sciences, environment and resources
SH3_2	Environmental and climate change, societal impact
SH3_3	Environmental and climate policy
SH3_4	Population dynamics; households, family and fertility
SH3_5	Health, ageing and society
SH3_6	Transportation and logistics, tourism
SH3_7	Spatial development, land use, regional planning
SH3_8	Urban, regional and rural studies
SH3_9	Human and social geography
SH3_10	Geographic information systems, spatial data analysis

SH4	**The Human Mind and Its Complexity:** Cognitive science, psychology, linguistics, philosophy of mind, education
SH4_1	Evolution of mind and cognitive functions, animal communication
SH4_2	Human life-span development
SH4_3	Neuropsychology
SH4_4	Cognitive and experimental psychology: perception, action, and higher cognitive processes
SH4_5	Social psychology
SH4_6	Clinical psychology
SH4_7	Formal, cognitive, functional and computational linguistics
SH4_8	Historical, typological, and comparative linguistics
SH4_9	Origin and acquisition of language and languages, language pathologies
SH4_10	Pragmatics, sociolinguistics, discourse analysis, second language learning
SH4_11	Philosophy of mind, epistemology and logic
SH4_12	Education, teaching and learning
SH5	**Cultures and Cultural Production:** Literature, philology, cultural studies, arts, philosophy
SH5_1	Classics, ancient literature and art
SH5_2	Theory and history of literature, comparative literature
SH5_3	Philology and palaeography
SH5_4	Visual and performing arts, design, arts-based research
SH5_5	Music and musicology; history of music
SH5_6	History of art and architecture
SH5_7	Museums, exhibitions, conservation and restoration
SH5_8	Cultural studies, symbolic representation, religious studies
SH5_9	Transregional studies
SH5_10	Cultural heritage, cultural identities and memories
SH5_11	Philosophy and history of philosophy
SH6	**The Study of the Human Past:** Archaeology and history
SH6_1	Historiography, theory and methods of history
SH6_2	Archaeology, archaeometry, landscape archaeology
SH6_3	Prehistory, palaeoanthropology, palaeodemography
SH6_4	Ancient history
SH6_5	Medieval history
SH6_6	Early modern history
SH6_7	Modern and contemporary history
SH6_8	Colonial and post-colonial history
SH6_9	Global history, transnational history, comparative history, entangled histories
SH6_10	Social and economic history
SH6_11	Gender history, history of collective identities and memories
SH6_12	History of ideas, intellectual and cultural history
SH6_13	History of science and technology

Anexa 4.1 – Domenii științifice ERC – 2014

Domain Code:	**PE**
Subdomain Code:	**PE1, PE2, PE3, PE4, PE5, PE6, PE7, PE8, PE9, PE10**
Research Area Code:	**PE1_1...PE1_21, PE2_1...PE2_18,.....**

DOMAIN
PHYSICAL SCIENCES AND ENGINEERING

PE1	**Mathematics:** All areas of mathematics, pure and applied, plus mathematical foundations of computer science, mathematical physics and statistics
PE1_1	Logic and foundations
PE1_2	Algebra
PE1_3	Number theory
PE1_4	Algebraic and complex geometry
PE1_5	Geometry
PE1_6	Topology
PE1_7	Lie groups, Lie algebras
PE1_8	Analysis
PE1_9	Operator algebras and functional analysis
PE1_10	ODE and dynamical systems
PE1_11	Theoretical aspects of partial differential equations
PE1_12	Mathematical physics
PE1_13	Probability
PE1_14	Statistics
PE1_15	Discrete mathematics and combinatorics
PE1_16	Mathematical aspects of computer science
PE1_17	Numerical analysis
PE1_18	Scientific computing and data processing
PE1_19	Control theory and optimisation
PE1_20	Application of mathematics in sciences
PE1_21	Application of mathematics in industry and society
PE2	**Fundamental Constituents of Matter:** Particle, nuclear, plasma, atomic, molecular, gas, and optical physics
PE2_1	Fundamental interactions and fields
PE2_2	Particle physics
PE2_3	Nuclear physics
PE2_4	Nuclear astrophysics
PE2_5	Gas and plasma physics
PE2_6	Electromagnetism
PE2_7	Atomic, molecular physics
PE2_8	Ultra-cold atoms and molecules
PE2_9	Optics, non-linear optics and nano-optics
PE2_10	Quantum optics and quantum information
PE2_11	Lasers, ultra-short lasers and laser physics
PE2_12	Acoustics
PE2_13	Relativity
PE2_14	Thermodynamics
PE2_15	Non-linear physics
PE2_16	General physics

PE2_17	Metrology and measurement
PE2_18	Statistical physics (gases)
PE3	**Condensed Matter Physics:** Structure, electronic properties, fluids, nanosciences, biophysics
PE3_1	Structure of solids and liquids
PE3_2	Mechanical and acoustical properties of condensed matter, Lattice dynamics
PE3_3	Transport properties of condensed matter
PE3_4	Electronic properties of materials, surfaces, interfaces, nanostructures, etc.
PE3_5	Semiconductors and insulators: material growth, physical properties
PE3_6	Macroscopic quantum phenomena: superconductivity, superfluidity, etc.
PE3_7	Spintronics
PE3_8	Magnetism and strongly correlated systems
PE3_9	Condensed matter – beam interactions (photons, electrons, etc.)
PE3_10	Nanophysics: nanoelectronics, nanophotonics, nanomagnetism, nanoelectromechanics, etc.
PE3_11	Mesoscopic physics
PE3_12	Molecular electronics
PE3_13	Structure and dynamics of disordered systems: soft matter (gels, colloids, liquid crystals, etc.), glasses, defects, etc.
PE3_14	Fluid dynamics (physics)
PE3_15	Statistical physics: phase transitions, noise and fluctuations, models of complex systems, etc.
PE3_16	Physics of biological systems
PE4	**Physical and Analytical Chemical Sciences:** Analytical chemistry, chemical theory, physical chemistry/chemical physics
PE4_1	Physical chemistry
PE4_2	Spectroscopic and spectrometric techniques
PE4_3	Molecular architecture and Structure
PE4_4	Surface science and nanostructures
PE4_5	Analytical chemistry
PE4_6	Chemical physics
PE4_7	Chemical instrumentation
PE4_8	Electrochemistry, electrodialysis, microfluidics, sensors
PE4_9	Method development in chemistry
PE4_10	Heterogeneous catalysis
PE4_11	Physical chemistry of biological systems
PE4_12	Chemical reactions: mechanisms, dynamics, kinetics and catalytic reactions
PE4_13	Theoretical and computational chemistry
PE4_14	Radiation and Nuclear chemistry
PE4_15	Photochemistry
PE4_16	Corrosion
PE4_17	Characterisation methods of materials
PE4_18	Environment chemistry
PE5	**Synthetic Chemistry and Materials:** Materials synthesis, structure-properties relations, functional and advanced materials, molecular architecture, organic chemistry
PE5_1	Structural properties of materials
PE5_2	Solid state materials
PE5_3	Surface modification
PE5_4	Thin films
PE5_5	Ionic liquids
PE5_6	New materials: oxides, alloys, composite, organic-inorganic hybrid, nanoparticles
PE5_7	Biomaterials synthesis
PE5_8	Intelligent materials – self assembled materials

PE5_9	Coordination chemistry
PE5_10	Colloid chemistry
PE5_11	Biological chemistry
PE5_12	Chemistry of condensed matter
PE5_13	Homogeneous catalysis
PE5_14	Macromolecular chemistry
PE5_15	Polymer chemistry
PE5_16	Supramolecular chemistry
PE5_17	Organic chemistry
PE5_18	Molecular chemistry
PE5_19	Combinatorial chemistry
PE6	**Computer Science and Informatics:** Informatics and information systems, computer science, scientific computing, intelligent systems
PE6_1	Computer architecture, pervasive computing, ubiquitous computing
PE6_2	Computer systems, parallel/distributed systems, sensor networks, embedded systems, cyber-physical systems
PE6_3	Software engineering, operating systems, computer languages
PE6_4	Theoretical computer science, formal methods, and quantum computing
PE6_5	Cryptology, security, privacy, quantum crypto
PE6_6	Algorithms, distributed, parallel and network algorithms, algorithmic game theory
PE6_7	Artificial intelligence, intelligent systems, multi agent systems
PE6_8	Computer graphics, computer vision, multi media, computer games
PE6_9	Human computer interaction and interface, visualisation and natural language processing
PE6_10	Web and information systems, database systems, information retrieval and digital libraries, data fusion
PE6_11	Machine learning, statistical data processing and applications using signal processing (e.g. speech, image, video)
PE6_12	Scientific computing, simulation and modelling tools
PE6_13	Bioinformatics, biocomputing, and DNA and molecular computation
PE7	**Systems and Communication Engineering:** Electronic, communication, optical and systems engineering
PE7_1	Control engineering
PE7_2	Electrical and electronic system engineering
PE7_3	Simulation engineering and modelling
PE7_4	Systems engineering, sensorics, actorics, automation
PE7_5	Micro- and nanoelectronics, optoelectronics and photonics
PE7_6	Communication technology, high-frequency technology
PE7_7	Signal processing
PE7_8	Networks (communication networks, sensor networks, networks of robots, etc.)
PE7_9	Man-machine-interfaces
PE7_10	Robotics
PE7_11	Components and systems for applications in medicine, biology and the environment, etc.
PE8	**Products and Processes Engineering:** Product design, process design and control, construction methods, civil engineering, energy systems, material engineering
PE8_1	Aerospace engineering
PE8_2	Chemical engineering, technical chemistry
PE8_3	Civil engineering, maritime/hydraulic engineering, geotechnics, waste treatment
PE8_4	Computational engineering
PE8_5	Fluid mechanics, hydraulic-, turbo-, and piston engines
PE8_6	Energy systems (production, distribution, application)
PE8_7	Micro (system) engineering

PE8_8	Mechanical and manufacturing engineering (shaping, mounting, joining, separation)
PE8_9	Materials engineering (biomaterials, metals, ceramics, polymers, composites, etc.)
PE8_10	Production technology, process engineering
PE8_11	Industrial design (product design, ergonomics, man-machine interfaces, etc.)
PE8_12	Sustainable design (for recycling, for environment, eco-design)
PE8_13	Lightweight construction, textile technology
PE8_14	Industrial bioengineering
PE8_15	Industrial biofuel production
PE8_16	Architectural engineering
PE9	**Universe Sciences:** Astro-physics/chemistry/biology; solar system; stellar, galactic and extragalactic astronomy, planetary systems, cosmology, space science, instrumentation
PE9_1	Solar and interplanetary physics
PE9_2	Planetary systems sciences
PE9_3	Interstellar medium
PE9_4	Formation of stars and planets
PE9_5	Astrobiology
PE9_6	Stars and stellar systems
PE9_7	The Galaxy
PE9_8	Formation and evolution of galaxies
PE9_9	Clusters of galaxies and large scale structures
PE9_10	High energy and particles astronomy – X-rays, cosmic rays, gamma rays, neutrinos
PE9_11	Relativistic astrophysics
PE9_12	Dark matter, dark energy
PE9_13	Gravitational astronomy
PE9_14	Cosmology
PE9_15	Space Sciences
PE9_16	Very large data bases: archiving, handling and analysis
PE9_17	Instrumentation - telescopes, detectors and techniques
PE10	**Earth System Science:** Physical geography, geology, geophysics, atmospheric sciences, oceanography, climatology, cryology, ecology, global environmental change, biogeochemical cycles, natural resources management
PE10_1	Atmospheric chemistry, atmospheric composition, air pollution
PE10_2	Meteorology, atmospheric physics and dynamics
PE10_3	Climatology and climate change
PE10_4	Terrestrial ecology, land cover change
PE10_5	Geology, tectonics, volcanology
PE10_6	Palaeoclimatology, palaeoecology
PE10_7	Physics of earth's interior, seismology, volcanology
PE10_8	Oceanography (physical, chemical, biological, geological)
PE10_9	Biogeochemistry, biogeochemical cycles, environmental chemistry
PE10_10	Mineralogy, petrology, igneous petrology, metamorphic petrology
PE10_11	Geochemistry, crystal chemistry, isotope geochemistry, thermodynamics
PE10_12	Sedimentology, soil science, palaeontology, earth evolution
PE10_13	Physical geography
PE10_14	Earth observations from space/remote sensing
PE10_15	Geomagnetism, palaeomagnetism
PE10_16	Ozone, upper atmosphere, ionosphere
PE10_17	Hydrology, water and soil pollution
PE10_18	Cryosphere, dynamics of snow and ice cover, sea ice, permafrosts and ice sheets

Anexa 4.1 – Domenii științifice ERC – 2014

Domain Code:	**LS**
Subdomain Code:	**LS1, LS2, LS3, LS4, LS5, LS6, LS7, LS8, LS9**
Research Area Code:	**LS1_1...LS1_11, LS2_1...LS2_14,.....**

DOMAIN
LIFE SCIENCES

LS1	**Molecular and Structural Biology and Biochemistry:** Molecular synthesis, modification and interaction, biochemistry, biophysics, structural biology, metabolism, signal transduction
LS1_1	Molecular interactions
LS1_2	General biochemistry and metabolism
LS1_3	DNA synthesis, modification, repair, recombination and degradation
LS1_4	RNA synthesis, processing, modification and degradation
LS1_5	Protein synthesis, modification and turnover
LS1_6	Lipid synthesis, modification and turnover
LS1_7	Carbohydrate synthesis, modification and turnover
LS1_8	Biophysics (e.g. transport mechanisms, bioenergetics, fluorescence)
LS1_9	Structural biology (crystallography and EM)
LS1_10	Structural biology (NMR)
LS1_11	Biochemistry and molecular mechanisms of signal transduction
LS2	**Genetics, Genomics, Bioinformatics and Systems Biology:** Molecular and population genetics, genomics, transcriptomics, proteomics, metabolomics, bioinformatics, computational biology, biostatistics, biological modelling and simulation, systems biology, genetic epidemiology
LS2_1	Genomics, comparative genomics, functional genomics
LS2_2	Transcriptomics
LS2_3	Proteomics
LS2_4	Metabolomics
LS2_5	Glycomics
LS2_6	Molecular genetics, reverse genetics and RNAi
LS2_7	Quantitative genetics
LS2_8	Epigenetics and gene regulation
LS2_9	Genetic epidemiology
LS2_10	Bioinformatics
LS2_11	Computational biology
LS2_12	Biostatistics
LS2_13	Systems biology
LS2_14	Biological systems analysis, modelling and simulation
LS3	**Cellular and Developmental Biology:** Cell biology, cell physiology, signal transduction, organogenesis, developmental genetics, pattern formation in plants and animals, stem cell biology
LS3_1	Morphology and functional imaging of cells
LS3_2	Cell biology and molecular transport mechanisms
LS3_3	Cell cycle and division
LS3_4	Apoptosis
LS3_5	Cell differentiation, physiology and dynamics
LS3_6	Organelle biology
LS3_7	Cell signalling and cellular interactions
LS3_8	Signal transduction
LS3_9	Development, developmental genetics, pattern formation and embryology in animals
LS3_10	Development, developmental genetics, pattern formation and embryology in plants

LS3_11	Cell genetics
LS3_12	Stem cell biology
LS4	**Physiology, Pathophysiology and Endocrinology:** Organ physiology, pathophysiology, endocrinology, metabolism, ageing, tumorigenesis, cardiovascular disease, metabolic syndrome
LS4_1	Organ physiology and pathophysiology
LS4_2	Comparative physiology and pathophysiology
LS4_3	Endocrinology
LS4_4	Ageing
LS4_5	Metabolism, biological basis of metabolism related disorders
LS4_6	Cancer and its biological basis
LS4_7	Cardiovascular diseases
LS4_8	Non-communicable diseases (except for neural/psychiatric, immunity-related, metabolism-related disorders, cancer and cardiovascular diseases)
LS5	**Neurosciences and Neural Disorders:** Neurobiology, neuroanatomy, neurophysiology, neurochemistry, neuropharmacology, neuroimaging, systems neuroscience, neurological and psychiatric disorders
LS5_1	Neuroanatomy and neurophysiology
LS5_2	Molecular and cellular neuroscience
LS5_3	Neurochemistry and neuropharmacology
LS5_4	Sensory systems (e.g. visual system, auditory system)
LS5_5	Mechanisms of pain
LS5_6	Developmental neurobiology
LS5_7	Cognition (e.g. learning, memory, emotions, speech)
LS5_8	Behavioural neuroscience (e.g. sleep, consciousness, handedness)
LS5_9	Systems neuroscience
LS5_10	Neuroimaging and computational neuroscience
LS5_11	Neurological disorders (e.g. Alzheimer's disease, Huntington's disease, Parkinson's disease)
LS5_12	Psychiatric disorders (e.g. schizophrenia, autism, Tourette's syndrome, obsessive compulsive disorder, depression, bipolar disorder, attention deficit hyperactivity disorder)
LS6	**Immunity and Infection:** The immune system and related disorders, infectious agents and diseases, prevention and treatment of infection
LS6_1	Innate immunity and inflammation
LS6_2	Adaptive immunity
LS6_3	Phagocytosis and cellular immunity
LS6_4	Immunosignalling
LS6_5	Immunological memory and tolerance
LS6_6	Immunogenetics
LS6_7	Microbiology
LS6_8	Virology
LS6_9	Bacteriology
LS6_10	Parasitology
LS6_11	Prevention and treatment of infection by pathogens (e.g. vaccination, antibiotics, fungicide)
LS6_12	Biological basis of immunity related disorders (e.g. autoimmunity)
LS6_13	Veterinary medicine and infectious diseases in animals
LS7	**Diagnostic Tools, Therapies and Public Health:** Aetiology, diagnosis and treatment of disease, public health, epidemiology, pharmacology, clinical medicine, regenerative medicine, medical ethics
LS7_1	Medical engineering and technology
LS7_2	Diagnostic tools (e.g. genetic, imaging)
LS7_3	Pharmacology, pharmacogenomics, drug discovery and design, drug therapy
LS7_4	Analgesia and Surgery
LS7_5	Toxicology

LS7_6	Gene therapy, cell therapy, regenerative medicine
LS7_7	Radiation therapy
LS7_8	Health services, health care research
LS7_9	Public health and epidemiology
LS7_10	Environment and health risks, occupational medicine
LS7_11	Medical ethics
LS8	**Evolutionary, Population and Environmental Biology:** Evolution, ecology, animal behaviour, population biology, biodiversity, biogeography, marine biology, eco-toxicology, microbial ecology
LS8_1	Ecology (theoretical and experimental; population, species and community level)
LS8_2	Population biology, population dynamics, population genetics
LS8_3	Systems evolution, biological adaptation, phylogenetics, systematics, comparative biology
LS8_4	Biodiversity, conservation biology, conservation genetics, invasion biology
LS8_5	Evolutionary biology: evolutionary ecology and genetics, co-evolution
LS8_6	Biogeography, macro-ecology
LS8_7	Animal behaviour
LS8_8	Environmental and marine biology
LS8_9	Environmental toxicology at the population and ecosystems level
LS8_10	Microbial ecology and evolution
LS8_11	Species interactions (e.g. food-webs, symbiosis, parasitism, mutualism)
LS9	**Applied Life Sciences and Non-Medical Biotechnology:** Agricultural, animal, fishery, forestry and food sciences, biotechnology, genetic engineering, synthetic and chemical biology, industrial biosciences; environmental biotechnology and remediation
LS9_1	Non-medical biotechnology and genetic engineering (including transgenic organisms, recombinant proteins, biosensors, bioreactors, microbiology)
LS9_2	Synthetic biology, chemical biology and bio-engineering
LS9_3	Animal sciences (including animal husbandry, aquaculture, fisheries, animal welfare)
LS9_4	Plant sciences (including crop production, plant breeding, agroecology, soil biology)
LS9_5	Food sciences (including food technology, nutrition)
LS9_6	Forestry and biomass production (including biofuels)
LS9_7	Environmental biotechnology (including bioremediation, biodegradation)
LS9_8	Biomimetics
LS9_9	Biohazards (including biological containment, biosafety, biosecurity)

Anexa 4.2 – Domenii științifice ERC – 2015

Domain Code:	**SH**
Subdomain Code:	**SH1, SH2, SH3, SH4, SH5, SH6**
Research Area Code:	**SH1_1...SH1_14, SH2_1...SH2_11,.....**

DOMAIN
SOCIAL SCIENCES AND HUMANITIES

SH1	**Markets, Individuals and Institutions:** Economics, finance and management
SH1_1	Macroeconomics; development economics; economic growth
SH1_2	International trade; international business; international management
SH1_3	Financial economics; monetary economics
SH1_4	Banking; corporate finance; international finance; accounting; auditing; insurance
SH1_5	Labour economics; human resource management
SH1_6	Econometrics; operations research
SH1_7	Behavioural economics; experimental economics; neuro-economics
SH1_8	Microeconomics; game theory
SH1_9	Marketing
SH1_10	Management; organisational behaviour; operations management
SH1_11	Industrial organisation; strategy; entrepreneurship
SH1_12	Technological change, innovation, research & development
SH1_13	Public economics; political economics; law and economics
SH1_14	History of economic thought; quantitative economic history; institutional economics; economic systems
SH2	**The Social World, Diversity, Institutions and Values:** Sociology, political science, law, communication, education
SH2_1	Social structure, social mobility
SH2_2	Social inequalities, social exclusion, social integration
SH2_3	Diversity and identities, gender, interethnic relations
SH2_4	Social policies, educational policies, welfare
SH2_5	Democratisation, social movements
SH2_6	Political systems, governance
SH2_7	Conflict and conflict resolution, violence
SH2_8	Legal studies, constitutions, comparative law
SH2_9	Human rights
SH2_10	International relations, global and transnational governance
SH2_11	Communication and information, networks, media
SH3	**Environment, Space and Population:** Sustainability science, demography, geography, regional studies and planning, science and technology studies
SH3_1	Sustainability sciences, environment and resources
SH3_2	Environmental and climate change, societal impact
SH3_3	Environmental and climate policy
SH3_4	Population dynamics; households, family and fertility
SH3_5	Health, ageing and society
SH3_6	Transportation and logistics, tourism
SH3_7	Spatial development, land use, regional planning
SH3_8	Urban, regional and rural studies
SH3_9	Human, social and economic geography
SH3_10	Geographic information systems, spatial data analysis
SH3_11	Social studies of science and technology

SH4	**The Human Mind and Its Complexity:** Cognitive science, psychology, linguistics, philosophy of mind, education
SH4_1	Human development and its disorders; comparative cognition
SH4_2	Personality and social cognition; emotion
SH4_3	Clinical and health psychology
SH4_4	Neuropsychology
SH4_5	Attention, perception, action, consciousness
SH4_6	Learning, memory; ageing
SH4_7	Reasoning, decision-making; intelligence
SH4_8	Language learning and processing (first and second languages)
SH4_9	Theoretical linguistics; computational linguistics
SH4_10	Language typology
SH4_11	Pragmatics, sociolinguistics, discourse analysis
SH4_12	Philosophy of mind, philosophy of language
SH4_13	Philosophy of science, epistemology and logic
SH4_14	Teaching and learning
SH5	**Cultures and Cultural Production:** Literature, philology, cultural studies, anthropology, arts, philosophy
SH5_1	Classics, ancient literature and art
SH5_2	Theory and history of literature, comparative literature
SH5_3	Philology and palaeography; historical linguistics
SH5_4	Visual and performing arts, design, arts-based research
SH5_5	Music and musicology; history of music
SH5_6	History of art and architecture
SH5_7	Museums, exhibitions, conservation and restoration
SH5_8	Cultural studies, symbolic representation, religious studies
SH5_9	Social anthropology, myth, ritual, kinship
SH5_10	Cultural heritage, cultural identities and memories
SH5_11	Metaphysics, philosophical anthropology; aesthetics
SH5_12	Ethics; social and political philosophy
SH5_13	History of philosophy
SH6	**The Study of the Human Past:** Archaeology and history
SH6_1	Historiography, theory and methods of history
SH6_2	Archaeology, archaeometry, landscape archaeology
SH6_3	Prehistory, palaeoanthropology, palaeodemography, protohistory
SH6_4	Ancient history
SH6_5	Medieval history
SH6_6	Early modern history
SH6_7	Modern and contemporary history
SH6_8	Colonial and post-colonial history
SH6_9	Global history, transnational history, comparative history, entangled histories
SH6_10	Social and economic history
SH6_11	Gender history
SH6_12	History of ideas, intellectual history, history of science and techniques
SH6_13	Cultural history, history of collective identities and memories

Anexa 4.2 – Domenii științifice ERC – 2015

Domain Code:	**PE**
Subdomain Code:	**PE1, PE2, PE3, PE4, PE5, PE6, PE7, PE8, PE9, PE10**
Research Area Code:	**PE1_1...PE1_21, PE2_1...PE2_18,.....**

DOMAIN
PHYSICAL SCIENCES AND ENGINEERING

PE1	**Mathematics:** All areas of mathematics, pure and applied, plus mathematical foundations of computer science, mathematical physics and statistics
PE1_1	Logic and foundations
PE1_2	Algebra
PE1_3	Number theory
PE1_4	Algebraic and complex geometry
PE1_5	Geometry
PE1_6	Topology
PE1_7	Lie groups, Lie algebras
PE1_8	Analysis
PE1_9	Operator algebras and functional analysis
PE1_10	ODE and dynamical systems
PE1_11	Theoretical aspects of partial differential equations
PE1_12	Mathematical physics
PE1_13	Probability
PE1_14	Statistics
PE1_15	Discrete mathematics and combinatorics
PE1_16	Mathematical aspects of computer science
PE1_17	Numerical analysis
PE1_18	Scientific computing and data processing
PE1_19	Control theory and optimisation
PE1_20	Application of mathematics in sciences
PE1_21	Application of mathematics in industry and society
PE2	**Fundamental Constituents of Matter:** Particle, nuclear, plasma, atomic, molecular, gas, and optical physics
PE2_1	Fundamental interactions and fields
PE2_2	Particle physics
PE2_3	Nuclear physics
PE2_4	Nuclear astrophysics
PE2_5	Gas and plasma physics
PE2_6	Electromagnetism
PE2_7	Atomic, molecular physics
PE2_8	Ultra-cold atoms and molecules
PE2_9	Optics, non-linear optics and nano-optics
PE2_10	Quantum optics and quantum information
PE2_11	Lasers, ultra-short lasers and laser physics
PE2_12	Acoustics
PE2_13	Relativity
PE2_14	Thermodynamics
PE2_15	Non-linear physics
PE2_16	General physics

PE2_17	Metrology and measurement
PE2_18	Statistical physics (gases)
PE3	**Condensed Matter Physics:** Structure, electronic properties, fluids, nanosciences, biophysics
PE3_1	Structure of solids and liquids
PE3_2	Mechanical and acoustical properties of condensed matter, Lattice dynamics
PE3_3	Transport properties of condensed matter
PE3_4	Electronic properties of materials, surfaces, interfaces, nanostructures, etc.
PE3_5	Semiconductors and insulators: material growth, physical properties
PE3_6	Macroscopic quantum phenomena: superconductivity, superfluidity, etc.
PE3_7	Spintronics
PE3_8	Magnetism and strongly correlated systems
PE3_9	Condensed matter – beam interactions (photons, electrons, etc.)
PE3_10	Nanophysics: nanoelectronics, nanophotonics, nanomagnetism, nanoelectromechanics, etc.
PE3_11	Mesoscopic physics
PE3_12	Molecular electronics
PE3_13	Structure and dynamics of disordered systems: soft matter (gels, colloids, liquid crystals, etc.), glasses, defects, etc.
PE3_14	Fluid dynamics (physics)
PE3_15	Statistical physics: phase transitions, noise and fluctuations, models of complex systems, etc.
PE3_16	Physics of biological systems
PE4	**Physical and Analytical Chemical Sciences:** Analytical chemistry, chemical theory, physical chemistry/chemical physics
PE4_1	Physical chemistry
PE4_2	Spectroscopic and spectrometric techniques
PE4_3	Molecular architecture and Structure
PE4_4	Surface science and nanostructures
PE4_5	Analytical chemistry
PE4_6	Chemical physics
PE4_7	Chemical instrumentation
PE4_8	Electrochemistry, electrodialysis, microfluidics, sensors
PE4_9	Method development in chemistry
PE4_10	Heterogeneous catalysis
PE4_11	Physical chemistry of biological systems
PE4_12	Chemical reactions: mechanisms, dynamics, kinetics and catalytic reactions
PE4_13	Theoretical and computational chemistry
PE4_14	Radiation and Nuclear chemistry
PE4_15	Photochemistry
PE4_16	Corrosion
PE4_17	Characterisation methods of materials
PE4_18	Environment chemistry
PE5	**Synthetic Chemistry and Materials:** Materials synthesis, structure-properties relations, functional and advanced materials, molecular architecture, organic chemistry
PE5_1	Structural properties of materials
PE5_2	Solid state materials
PE5_3	Surface modification
PE5_4	Thin films
PE5_5	Ionic liquids
PE5_6	New materials: oxides, alloys, composite, organic-inorganic hybrid, nanoparticles
PE5_7	Biomaterials, Biomaterials synthesis
PE5_8	Intelligent materials – self assembled materials

PE5_9	Coordination chemistry
PE5_10	Colloid chemistry
PE5_11	Biological chemistry
PE5_12	Chemistry of condensed matter
PE5_13	Homogeneous catalysis
PE5_14	Macromolecular chemistry
PE5_15	Polymer chemistry
PE5_16	Supramolecular chemistry
PE5_17	Organic chemistry
PE5_18	Molecular chemistry
PE5_19	Combinatorial chemistry
PE6	**Computer Science and Informatics:** Informatics and information systems, computer science, scientific computing, intelligent systems
PE6_1	Computer architecture, pervasive computing, ubiquitous computing
PE6_2	Computer systems, parallel/distributed systems, sensor networks, embedded systems, cyber-physical systems
PE6_3	Software engineering, operating systems, computer languages
PE6_4	Theoretical computer science, formal methods, and quantum computing
PE6_5	Cryptology, security, privacy, quantum crypto
PE6_6	Algorithms, distributed, parallel and network algorithms, algorithmic game theory
PE6_7	Artificial intelligence, intelligent systems, multi agent systems
PE6_8	Computer graphics, computer vision, multi media, computer games
PE6_9	Human computer interaction and interface, visualisation and natural language processing
PE6_10	Web and information systems, database systems, information retrieval and digital libraries, data fusion
PE6_11	Machine learning, statistical data processing and applications using signal processing (e.g. speech, image, video)
PE6_12	Scientific computing, simulation and modelling tools
PE6_13	Bioinformatics, biocomputing, and DNA and molecular computation
PE7	**Systems and Communication Engineering:** Electrical, electronic, communication, optical and systems engineering
PE7_1	Control engineering
PE7_2	Electrical engineering: power components and/or systems
PE7_3	Simulation engineering and modelling
PE7_4	(Micro and nano) systems engineering
PE7_5	(Micro and nano) electronic, optoelectronic and photonic components
PE7_6	Communication technology, high-frequency technology
PE7_7	Signal processing
PE7_8	Networks (communication networks, sensor networks, networks of robots, etc.)
PE7_9	Man-machine-interfaces
PE7_10	Robotics
PE7_11	Components and systems for applications (in e.g. medicine, biology, environment)
PE7_12	Electrical energy production, distribution, application
PE8	**Products and Processes Engineering:** Product design, process design and control, construction methods, civil engineering, energy systems, material engineering
PE8_1	Aerospace engineering
PE8_2	Chemical engineering, technical chemistry
PE8_3	Civil engineering, architecture, maritime/hydraulic engineering, geotechnics, waste treatment
PE8_4	Computational engineering
PE8_5	Fluid mechanics, hydraulic-, turbo-, and piston engines
PE8_6	Energy processes engineering

PE8_7	Mechanical and manufacturing engineering (shaping, mounting, joining, separation)
PE8_8	Materials engineering (metals, ceramics, polymers, composites, etc.)
PE8_9	Production technology, process engineering
PE8_10	Industrial design (product design, ergonomics, man-machine interfaces, etc.)
PE8_11	Sustainable design (for recycling, for environment, eco-design)
PE8_12	Lightweight construction, textile technology
PE8_13	Industrial bioengineering
PE9	**Universe Sciences:** Astro-physics/chemistry/biology; solar system; stellar, galactic and extragalactic astronomy, planetary systems, cosmology, space science, instrumentation
PE9_1	Solar and interplanetary physics
PE9_2	Planetary systems sciences
PE9_3	Interstellar medium
PE9_4	Formation of stars and planets
PE9_5	Astrobiology
PE9_6	Stars and stellar systems
PE9_7	The Galaxy
PE9_8	Formation and evolution of galaxies
PE9_9	Clusters of galaxies and large scale structures
PE9_10	High energy and particles astronomy – X-rays, cosmic rays, gamma rays, neutrinos
PE9_11	Relativistic astrophysics
PE9_12	Dark matter, dark energy
PE9_13	Gravitational astronomy
PE9_14	Cosmology
PE9_15	Space Sciences
PE9_16	Very large data bases: archiving, handling and analysis
PE9_17	Instrumentation - telescopes, detectors and techniques
PE10	**Earth System Science:** Physical geography, geology, geophysics, atmospheric sciences, oceanography, climatology, cryology, ecology, global environmental change, biogeochemical cycles, natural resources management
PE10_1	Atmospheric chemistry, atmospheric composition, air pollution
PE10_2	Meteorology, atmospheric physics and dynamics
PE10_3	Climatology and climate change
PE10_4	Terrestrial ecology, land cover change
PE10_5	Geology, tectonics, volcanology
PE10_6	Palaeoclimatology, palaeoecology
PE10_7	Physics of earth's interior, seismology, volcanology
PE10_8	Oceanography (physical, chemical, biological, geological)
PE10_9	Biogeochemistry, biogeochemical cycles, environmental chemistry
PE10_10	Mineralogy, petrology, igneous petrology, metamorphic petrology
PE10_11	Geochemistry, crystal chemistry, isotope geochemistry, thermodynamics
PE10_12	Sedimentology, soil science, palaeontology, earth evolution
PE10_13	Physical geography
PE10_14	Earth observations from space/remote sensing
PE10_15	Geomagnetism, palaeomagnetism
PE10_16	Ozone, upper atmosphere, ionosphere
PE10_17	Hydrology, water and soil pollution
PE10_18	Cryosphere, dynamics of snow and ice cover, sea ice, permafrosts and ice sheets

Anexa 4.2 – Domenii ştiinţifice ERC – 2015

Domain Code:	**LS**
Subdomain Code:	**LS1, LS2, LS3, LS4, LS5, LS6, LS7, LS8, LS9**
Research Area Code:	**LS1_1...LS1_11, LS2_1...LS2_14,.....**

DOMAIN
LIFE SCIENCES

LS1	**Molecular and Structural Biology and Biochemistry:** Molecular synthesis, modification and interaction, biochemistry, biophysics, structural biology, metabolism, signal transduction
LS1_1	Molecular interactions
LS1_2	General biochemistry and metabolism
LS1_3	DNA synthesis, modification, repair, recombination and degradation
LS1_4	RNA synthesis, processing, modification and degradation
LS1_5	Protein synthesis, modification and turnover
LS1_6	Lipid synthesis, modification and turnover
LS1_7	Carbohydrate synthesis, modification and turnover
LS1_8	Biophysics (e.g. transport mechanisms, bioenergetics, fluorescence)
LS1_9	Structural biology (crystallography and EM)
LS1_10	Structural biology (NMR)
LS1_11	Biochemistry and molecular mechanisms of signal transduction
LS2	**Genetics, Genomics, Bioinformatics and Systems Biology:** Molecular and population genetics, genomics, transcriptomics, proteomics, metabolomics, bioinformatics, computational biology, biostatistics, biological modelling and simulation, systems biology, genetic epidemiology
LS2_1	Genomics, comparative genomics, functional genomics
LS2_2	Transcriptomics
LS2_3	Proteomics
LS2_4	Metabolomics
LS2_5	Glycomics
LS2_6	Molecular genetics, reverse genetics and RNAi
LS2_7	Quantitative genetics
LS2_8	Epigenetics and gene regulation
LS2_9	Genetic epidemiology
LS2_10	Bioinformatics
LS2_11	Computational biology
LS2_12	Biostatistics
LS2_13	Systems biology
LS2_14	Biological systems analysis, modelling and simulation
LS3	**Cellular and Developmental Biology:** Cell biology, cell physiology, signal transduction, organogenesis, developmental genetics, pattern formation in plants and animals, stem cell biology
LS3_1	Morphology and functional imaging of cells
LS3_2	Cell biology and molecular transport mechanisms
LS3_3	Cell cycle and division
LS3_4	Apoptosis
LS3_5	Cell differentiation, physiology and dynamics
LS3_6	Organelle biology
LS3_7	Cell signalling and cellular interactions
LS3_8	Signal transduction
LS3_9	Development, developmental genetics, pattern formation and embryology in animals
LS3_10	Development, developmental genetics, pattern formation and embryology in plants

LS3_11	Cell genetics
LS3_12	Stem cell biology
LS4	**Physiology, Pathophysiology and Endocrinology:** Organ physiology, pathophysiology, endocrinology, metabolism, ageing, tumorigenesis, cardiovascular disease, metabolic syndrome
LS4_1	Organ physiology and pathophysiology
LS4_2	Comparative physiology and pathophysiology
LS4_3	Endocrinology
LS4_4	Ageing
LS4_5	Metabolism, biological basis of metabolism related disorders
LS4_6	Cancer and its biological basis
LS4_7	Cardiovascular diseases
LS4_8	Non-communicable diseases (except for neural/psychiatric, immunity-related, metabolism-related disorders, cancer and cardiovascular diseases)
LS5	**Neurosciences and Neural Disorders:** Neurobiology, neuroanatomy, neurophysiology, neurochemistry, neuropharmacology, neuroimaging, systems neuroscience, neurological and psychiatric disorders
LS5_1	Neuroanatomy and neurophysiology
LS5_2	Molecular and cellular neuroscience
LS5_3	Neurochemistry and neuropharmacology
LS5_4	Sensory systems (e.g. visual system, auditory system)
LS5_5	Mechanisms of pain
LS5_6	Developmental neurobiology
LS5_7	Cognition (e.g. learning, memory, emotions, speech)
LS5_8	Behavioural neuroscience (e.g. sleep, consciousness, handedness)
LS5_9	Systems neuroscience
LS5_10	Neuroimaging and computational neuroscience
LS5_11	Neurological disorders (e.g. Alzheimer's disease, Huntington's disease, Parkinson's disease)
LS5_12	Psychiatric disorders (e.g. schizophrenia, autism, Tourette's syndrome, obsessive compulsive disorder, depression, bipolar disorder, attention deficit hyperactivity disorder)
LS6	**Immunity and Infection:** The immune system and related disorders, infectious agents and diseases, prevention and treatment of infection
LS6_1	Innate immunity and inflammation
LS6_2	Adaptive immunity
LS6_3	Phagocytosis and cellular immunity
LS6_4	Immunosignalling
LS6_5	Immunological memory and tolerance
LS6_6	Immunogenetics
LS6_7	Microbiology
LS6_8	Virology
LS6_9	Bacteriology
LS6_10	Parasitology
LS6_11	Prevention and treatment of infection by pathogens (e.g. vaccination, antibiotics, fungicide)
LS6_12	Biological basis of immunity related disorders (e.g. autoimmunity)
LS6_13	Veterinary medicine and infectious diseases in animals
LS7	**Diagnostic Tools, Therapies and Public Health:** Aetiology, diagnosis and treatment of disease, public health, epidemiology, pharmacology, clinical medicine, regenerative medicine, medical ethics
LS7_1	Medical engineering and technology
LS7_2	Diagnostic tools (e.g. genetic, imaging)
LS7_3	Pharmacology, pharmacogenomics, drug discovery and design, drug therapy
LS7_4	Analgesia and Surgery
LS7_5	Toxicology

LS7_6	Gene therapy, cell therapy, regenerative medicine
LS7_7	Radiation therapy
LS7_8	Health services, health care research
LS7_9	Public health and epidemiology
LS7_10	Environment and health risks, occupational medicine
LS7_11	Medical ethics
LS8	**Evolutionary, Population and Environmental Biology:** Evolution, ecology, animal behaviour, population biology, biodiversity, biogeography, marine biology, eco-toxicology, microbial ecology
LS8_1	Ecology (theoretical and experimental; population, species and community level)
LS8_2	Population biology, population dynamics, population genetics
LS8_3	Systems evolution, biological adaptation, phylogenetics, systematics, comparative biology
LS8_4	Biodiversity, conservation biology, conservation genetics, invasion biology
LS8_5	Evolutionary biology: evolutionary ecology and genetics, co-evolution
LS8_6	Biogeography, macro-ecology
LS8_7	Animal behaviour
LS8_8	Environmental and marine biology
LS8_9	Environmental toxicology at the population and ecosystems level
LS8_10	Microbial ecology and evolution
LS8_11	Species interactions (e.g. food-webs, symbiosis, parasitism, mutualism)
LS9	**Applied Life Sciences and Non-Medical Biotechnology:** Applied plant and animal sciences; food sciences; forestry; industrial, environmental and non-medical biotechnologies, bioengineering; synthetic and chemical biology; biomimetics; bioremediation
LS9_1	Non-medical biotechnology and genetic engineering (including transgenic organisms, recombinant proteins, biosensors, bioreactors, microbiology)
LS9_2	Synthetic biology, chemical biology and bio-engineering
LS9_3	Animal sciences (including animal husbandry, aquaculture, fisheries, animal welfare)
LS9_4	Plant sciences (including crop production, plant breeding, agroecology, soil biology)
LS9_5	Food sciences (including food technology, nutrition)
LS9_6	Forestry and biomass production (including biofuels)
LS9_7	Environmental biotechnology (including bioremediation, biodegradation)
LS9_8	Biomimetics
LS9_9	Biohazards (including biological containment, biosafety, biosecurity)

Anexa 4.3 – Domenii științifice ERC – 2016

Domain Code:	**SH**
Subdomain Code:	**SH1, SH2, SH3, SH4, SH5, SH6**
Research Area Code:	**SH1_1...SH1_14, SH2_1...SH2_12,.....**

DOMAIN
SOCIAL SCIENCES AND HUMANITIES

SH1	**Individuals, Markets and Organisations:** Economics, finance and management
SH1_1	Macroeconomics; monetary economics; economic growth
SH1_2	International trade; international business; international management; spatial economics
SH1_3	Development economics, health economics, education economics
SH1_4	Financial economics; banking; corporate finance; international finance; accounting; auditing; insurance
SH1_5	Labour and demographic economics; human resource management
SH1_6	Econometrics; operations research
SH1_7	Behavioural economics; experimental economics; neuro-economics
SH1_8	Microeconomics; game theory
SH1_9	Industrial organisation; strategy; entrepreneurship
SH1_10	Management; marketing; organisational behaviour; operations management
SH1_11	Technological change, innovation, research & development
SH1_12	Agricultural economics; energy economics; environmental economics
SH1_13	Public economics; political economics; law and economics
SH1_14	Quantitative economic history; institutional economics; economic systems
SH2	**Institutions, Values, Environment and Space:** Political science, law, sustainability science, geography, regional studies and planning
SH2_1	Political systems, governance
SH2_2	Democratisation and social movements
SH2_3	Conflict resolution, war
SH2_4	Legal studies, constitutions, human rights, comparative law
SH2_5	International relations, global and transnational governance
SH2_6	Sustainability sciences, environment and resources
SH2_7	Environmental and climate change, societal impact and policy
SH2_8	Energy, transportation and mobility
SH2_9	Urban, regional and rural studies
SH2_10	Land use and regional planning
SH2_11	Human, economic and social geography
SH2_12	GIS, spatial analysis; big data in political, geographical and legal studies
SH3	**The Social World, Diversity, Population:** Sociology, social psychology, demography, education, communication
SH3_1	Social structure, social mobility
SH3_2	Inequalities, discrimination, prejudice, aggression and violence, antisocial behaviour
SH3_3	Social integration, exclusion, prosocial behaviour
SH3_4	Attitudes and beliefs
SH3_5	Social influence; power and group behaviour; classroom management
SH3_6	Diversity and identities, gender, interethnic relations
SH3_7	Social policies, welfare
SH3_8	Population dynamics; households, family and fertility
SH3_9	Health, ageing and society
SH3_10	Social aspects of learning, curriculum studies, educational policies

SH3_11	Communication and information, networks, media
SH3_12	Digital social research
SH3_13	Science and technology studies
SH4	**The Human Mind and Its Complexity:** Cognitive science, psychology, linguistics, philosophy of mind
SH4_1	Cognitive basis of human development and education, developmental disorders; comparative cognition
SH4_2	Personality and social cognition; emotion
SH4_3	Clinical and health psychology
SH4_4	Neuropsychology
SH4_5	Attention, perception, action, consciousness
SH4_6	Learning, memory; cognition in ageing
SH4_7	Reasoning, decision-making; intelligence
SH4_8	Language learning and processing (first and second languages)
SH4_9	Theoretical linguistics; computational linguistics
SH4_10	Language typology
SH4_11	Pragmatics, sociolinguistics, discourse analysis
SH4_12	Philosophy of mind, philosophy of language
SH4_13	Philosophy of science, epistemology, logic
SH5	**Cultures and Cultural Production:** Literature, philology, cultural studies, anthropology, study of the arts, philosophy
SH5_1	Classics, ancient literature and art
SH5_2	Theory and history of literature, comparative literature
SH5_3	Philology and palaeography; historical linguistics
SH5_4	Visual and performing arts, film, design
SH5_5	Music and musicology; history of music
SH5_6	History of art and architecture, arts-based research
SH5_7	Museums, exhibitions, conservation and restoration
SH5_8	Cultural studies, cultural identities and memories, cultural heritage
SH5_9	Social anthropology, religious studies, symbolic representation
SH5_10	Metaphysics, philosophical anthropology; aesthetics
SH5_11	Ethics; social and political philosophy
SH5_12	History of philosophy
SH5_13	Computational Modelling and Digitisation in the Cultural Sphere
SH6	**The Study of the Human Past:** Archaeology and history
SH6_1	Historiography, Theory and methods in history, including the analysis of digital data
SH6_2	Classical archaeology, history of archaeology
SH6_3	General archaeology, archaeometry, landscape archaeology
SH6_4	Prehistory, palaeoanthropology, palaeodemography, protohistory
SH6_5	Ancient history
SH6_6	Medieval history
SH6_7	Early modern history
SH6_8	Modern and contemporary history
SH6_9	Colonial and post-colonial history
SH6_10	Global history, transnational history, comparative history, entangled histories
SH6_11	Social and economic history
SH6_12	Gender history; Cultural History; History of Collective Identities and Memories
SH6_13	History of Ideas, Intellectual History, history of economic thought
SH6_14	History of Science, Medicine and Technologies

Anexa 4.3 – Domenii ştiinţifice ERC – 2016

Domain Code:	**PE**
Subdomain Code:	**PE1, PE2, PE3, PE4, PE5, PE6, PE7, PE8, PE9, PE10**
Research Area Code:	**PE1_1...PE1_21, PE2_1...PE2_18,.....**

DOMAIN
PHYSICAL SCIENCES AND ENGINEERING

PE1	**Mathematics:** All areas of mathematics, pure and applied, plus mathematical foundations of computer science, mathematical physics and statistics
PE1_1	Logic and foundations
PE1_2	Algebra
PE1_3	Number theory
PE1_4	Algebraic and complex geometry
PE1_5	Geometry
PE1_6	Topology
PE1_7	Lie groups, Lie algebras
PE1_8	Analysis
PE1_9	Operator algebras and functional analysis
PE1_10	ODE and dynamical systems
PE1_11	Theoretical aspects of partial differential equations
PE1_12	Mathematical physics
PE1_13	Probability
PE1_14	Statistics
PE1_15	Discrete mathematics and combinatorics
PE1_16	Mathematical aspects of computer science
PE1_17	Numerical analysis
PE1_18	Scientific computing and data processing
PE1_19	Control theory and optimisation
PE1_20	Application of mathematics in sciences
PE1_21	Application of mathematics in industry and society
PE2	**Fundamental Constituents of Matter:** Particle, nuclear, plasma, atomic, molecular, gas, and optical physics
PE2_1	Fundamental interactions and fields
PE2_2	Particle physics
PE2_3	Nuclear physics
PE2_4	Nuclear astrophysics
PE2_5	Gas and plasma physics
PE2_6	Electromagnetism
PE2_7	Atomic, molecular physics
PE2_8	Ultra-cold atoms and molecules
PE2_9	Optics, non-linear optics and nano-optics
PE2_10	Quantum optics and quantum information
PE2_11	Lasers, ultra-short lasers and laser physics
PE2_12	Acoustics
PE2_13	Relativity
PE2_14	Thermodynamics
PE2_15	Non-linear physics
PE2_16	General physics

PE2_17	Metrology and measurement
PE2_18	Statistical physics (gases)
PE3	**Condensed Matter Physics:** Structure, electronic properties, fluids, nanosciences, biophysics
PE3_1	Structure of solids and liquids
PE3_2	Mechanical and acoustical properties of condensed matter, Lattice dynamics
PE3_3	Transport properties of condensed matter
PE3_4	Electronic properties of materials, surfaces, interfaces, nanostructures, etc.
PE3_5	Semiconductors and insulators: material growth, physical properties
PE3_6	Macroscopic quantum phenomena: superconductivity, superfluidity, etc.
PE3_7	Spintronics
PE3_8	Magnetism and strongly correlated systems
PE3_9	Condensed matter – beam interactions (photons, electrons, etc.)
PE3_10	Nanophysics: nanoelectronics, nanophotonics, nanomagnetism, nanoelectromechanics, etc.
PE3_11	Mesoscopic physics
PE3_12	Molecular electronics
PE3_13	Structure and dynamics of disordered systems: soft matter (gels, colloids, liquid crystals, etc.), glasses, defects, etc.
PE3_14	Fluid dynamics (physics)
PE3_15	Statistical physics: phase transitions, noise and fluctuations, models of complex systems, etc.
PE3_16	Physics of biological systems
PE4	**Physical and Analytical Chemical Sciences:** Analytical chemistry, chemical theory, physical chemistry/chemical physics
PE4_1	Physical chemistry
PE4_2	Spectroscopic and spectrometric techniques
PE4_3	Molecular architecture and Structure
PE4_4	Surface science and nanostructures
PE4_5	Analytical chemistry
PE4_6	Chemical physics
PE4_7	Chemical instrumentation
PE4_8	Electrochemistry, electrodialysis, microfluidics, sensors
PE4_9	Method development in chemistry
PE4_10	Heterogeneous catalysis
PE4_11	Physical chemistry of biological systems
PE4_12	Chemical reactions: mechanisms, dynamics, kinetics and catalytic reactions
PE4_13	Theoretical and computational chemistry
PE4_14	Radiation and Nuclear chemistry
PE4_15	Photochemistry
PE4_16	Corrosion
PE4_17	Characterisation methods of materials
PE4_18	Environment chemistry
PE5	**Synthetic Chemistry and Materials:** Materials synthesis, structure-properties relations, functional and advanced materials, molecular architecture, organic chemistry
PE5_1	Structural properties of materials
PE5_2	Solid state materials
PE5_3	Surface modification
PE5_4	Thin films
PE5_5	Ionic liquids
PE5_6	New materials: oxides, alloys, composite, organic-inorganic hybrid, nanoparticles
PE5_7	Biomaterials, biomaterials synthesis
PE5_8	Intelligent materials – self assembled materials

PE5_9	Coordination chemistry
PE5_10	Colloid chemistry
PE5_11	Biological chemistry
PE5_12	Chemistry of condensed matter
PE5_13	Homogeneous catalysis
PE5_14	Macromolecular chemistry
PE5_15	Polymer chemistry
PE5_16	Supramolecular chemistry
PE5_17	Organic chemistry
PE5_18	Molecular chemistry
PE5_19	Combinatorial chemistry
PE6	**Computer Science and Informatics:** Informatics and information systems, computer science, scientific computing, intelligent systems
PE6_1	Computer architecture, pervasive computing, ubiquitous computing
PE6_2	Computer systems, parallel/distributed systems, sensor networks, embedded systems, cyber-physical systems
PE6_3	Software engineering, operating systems, computer languages
PE6_4	Theoretical computer science, formal methods, and quantum computing
PE6_5	Cryptology, security, privacy, quantum crypto
PE6_6	Algorithms, distributed, parallel and network algorithms, algorithmic game theory
PE6_7	Artificial intelligence, intelligent systems, multi agent systems
PE6_8	Computer graphics, computer vision, multi media, computer games
PE6_9	Human computer interaction and interface, visualisation and natural language processing
PE6_10	Web and information systems, database systems, information retrieval and digital libraries, data fusion
PE6_11	Machine learning, statistical data processing and applications using signal processing (e.g. speech, image, video)
PE6_12	Scientific computing, simulation and modelling tools
PE6_13	Bioinformatics, biocomputing, and DNA and molecular computation
PE7	**Systems and Communication Engineering:** Electrical, electronic, communication, optical and systems engineering
PE7_1	Control engineering
PE7_2	Electrical engineering: power components and/or systems
PE7_3	Simulation engineering and modelling
PE7_4	(Micro and nano) systems engineering
PE7_5	(Micro and nano) electronic, optoelectronic and photonic components
PE7_6	Communication technology, high-frequency technology
PE7_7	Signal processing
PE7_8	Networks (communication networks, sensor networks, networks of robots, etc.)
PE7_9	Man-machine-interfaces
PE7_10	Robotics
PE7_11	Components and systems for applications (in e.g. medicine, biology, environment)
PE7_12	Electrical energy production, distribution, application
PE8	**Products and Processes Engineering:** Product design, process design and control, construction methods, civil engineering, energy processes, material engineering
PE8_1	Aerospace engineering
PE8_2	Chemical engineering, technical chemistry
PE8_3	Civil engineering, architecture, maritime/hydraulic engineering, geotechnics, waste treatment
PE8_4	Computational engineering
PE8_5	Fluid mechanics, hydraulic-, turbo-, and piston engines
PE8_6	Energy processes engineering
PE8_7	Mechanical and manufacturing engineering (shaping, mounting, joining, separation)

PE8_8	Materials engineering (metals, ceramics, polymers, composites, etc.)
PE8_9	Production technology, process engineering
PE8_10	Industrial design (product design, ergonomics, man-machine interfaces, etc.)
PE8_11	Sustainable design (for recycling, for environment, eco-design)
PE8_12	Lightweight construction, textile technology
PE8_13	Industrial bioengineering
PE9	**Universe Sciences:** Astro-physics/chemistry/biology; solar system; stellar, galactic and extragalactic astronomy, planetary systems, cosmology, space science, instrumentation
PE9_1	Solar and interplanetary physics
PE9_2	Planetary systems sciences
PE9_3	Interstellar medium
PE9_4	Formation of stars and planets
PE9_5	Astrobiology
PE9_6	Stars and stellar systems
PE9_7	The Galaxy
PE9_8	Formation and evolution of galaxies
PE9_9	Clusters of galaxies and large scale structures
PE9_10	High energy and particles astronomy – X-rays, cosmic rays, gamma rays, neutrinos
PE9_11	Relativistic astrophysics
PE9_12	Dark matter, dark energy
PE9_13	Gravitational astronomy
PE9_14	Cosmology
PE9_15	Space Sciences
PE9_16	Very large data bases: archiving, handling and analysis
PE9_17	Instrumentation - telescopes, detectors and techniques
PE10	**Earth System Science:** Physical geography, geology, geophysics, atmospheric sciences, oceanography, climatology, cryology , ecology, global environmental change, biogeochemical cycles, natural resources management
PE10_1	Atmospheric chemistry, atmospheric composition, air pollution
PE10_2	Meteorology, atmospheric physics and dynamics
PE10_3	Climatology and climate change
PE10_4	Terrestrial ecology, land cover change
PE10_5	Geology, tectonics, volcanology
PE10_6	Palaeoclimatology, palaeoecology
PE10_7	Physics of earth's interior, seismology, volcanology
PE10_8	Oceanography (physical, chemical, biological, geological)
PE10_9	Biogeochemistry, biogeochemical cycles, environmental chemistry
PE10_10	Mineralogy, petrology, igneous petrology, metamorphic petrology
PE10_11	Geochemistry, crystal chemistry, isotope geochemistry, thermodynamics
PE10_12	Sedimentology, soil science, palaeontology, earth evolution
PE10_13	Physical geography
PE10_14	Earth observations from space/remote sensing
PE10_15	Geomagnetism, palaeomagnetism
PE10_16	Ozone, upper atmosphere, ionosphere
PE10_17	Hydrology, water and soil pollution
PE10_18	Cryosphere, dynamics of snow and ice cover, sea ice, permafrosts and ice sheets

Anexa 4.3 – Domenii ştiinţifice ERC – 2016

Domain Code:	**LS**
Subdomain Code:	**LS1, LS2, LS3, LS4, LS5, LS6**
Research Area Code:	**LS1_1... LS1_11, LS2_1 ...LS2_14, ...**

DOMAIN
LIFE SCIENCES

LS1	**Molecular and Structural Biology and Biochemistry:** Molecular synthesis, modification and interaction, biochemistry, biophysics, structural biology, metabolism, signal transduction
LS1_1	Molecular interactions
LS1_2	General biochemistry and metabolism
LS1_3	DNA synthesis, modification, repair, recombination and degradation
LS1_4	RNA synthesis, processing, modification and degradation
LS1_5	Protein synthesis, modification and turnover
LS1_6	Lipid synthesis, modification and turnover
LS1_7	Carbohydrate synthesis, modification and turnover
LS1_8	Biophysics (e.g. transport mechanisms, bioenergetics, fluorescence)
LS1_9	Structural biology (crystallography and EM)
LS1_10	Structural biology (NMR)
LS1_11	Biochemistry and molecular mechanisms of signal transduction
LS2	**Genetics, Genomics, Bioinformatics and Systems Biology:** Molecular and population genetics, genomics, transcriptomics, proteomics, metabolomics, bioinformatics, computational biology, biostatistics, biological modelling and simulation, systems biology, genetic epidemiology
LS2_1	Genomics, comparative genomics, functional genomics
LS2_2	Transcriptomics
LS2_3	Proteomics
LS2_4	Metabolomics
LS2_5	Glycomics
LS2_6	Molecular genetics, reverse genetics and RNAi
LS2_7	Quantitative genetics
LS2_8	Epigenetics and gene regulation
LS2_9	Genetic epidemiology
LS2_10	Bioinformatics
LS2_11	Computational biology
LS2_12	Biostatistics
LS2_13	Systems biology
LS2_14	Biological systems analysis, modelling and simulation
LS3	**Cellular and Developmental Biology:** Cell biology, cell physiology, signal transduction, organogenesis, developmental genetics, pattern formation in plants and animals, stem cell biology
LS3_1	Morphology and functional imaging of cells
LS3_2	Cell biology and molecular transport mechanisms
LS3_3	Cell cycle and division
LS3_4	Apoptosis
LS3_5	Cell differentiation, physiology and dynamics
LS3_6	Organelle biology
LS3_7	Cell signalling and cellular interactions
LS3_8	Signal transduction
LS3_9	Development, developmental genetics, pattern formation and embryology in animals
LS3_10	Development, developmental genetics, pattern formation and embryology in plants

LS3_11	Cell genetics
LS3_12	Stem cell biology
LS4	**Physiology, Pathophysiology and Endocrinology:** Organ physiology, pathophysiology, endocrinology, metabolism, ageing, tumorigenesis, cardiovascular disease, metabolic syndrome
LS4_1	Organ physiology and pathophysiology
LS4_2	Comparative physiology and pathophysiology
LS4_3	Endocrinology
LS4_4	Ageing
LS4_5	Metabolism, biological basis of metabolism related disorders
LS4_6	Cancer and its biological basis
LS4_7	Cardiovascular diseases
LS4_8	Non-communicable diseases (except for neural/psychiatric, immunity-related, metabolism-related disorders, cancer and cardiovascular diseases)
LS5	**Neurosciences and Neural Disorders:** Neurobiology, neuroanatomy, neurophysiology, neurochemistry, neuropharmacology, neuroimaging, systems neuroscience, neurological and psychiatric disorders
LS5_1	Neuroanatomy and neurophysiology
LS5_2	Molecular and cellular neuroscience
LS5_3	Neurochemistry and neuropharmacology
LS5_4	Sensory systems (e.g. visual system, auditory system)
LS5_5	Mechanisms of pain
LS5_6	Developmental neurobiology
LS5_7	Cognition (e.g. learning, memory, emotions, speech)
LS5_8	Behavioural neuroscience (e.g. sleep, consciousness, handedness)
LS5_9	Systems neuroscience
LS5_10	Neuroimaging and computational neuroscience
LS5_11	Neurological disorders (e.g. Alzheimer's disease, Huntington's disease, Parkinson's disease)
LS5_12	Psychiatric disorders (e.g. schizophrenia, autism, Tourette's syndrome, obsessive compulsive disorder, depression, bipolar disorder, attention deficit hyperactivity disorder)
LS6	**Immunity and Infection:** The immune system and related disorders, infectious agents and diseases, prevention and treatment of infection
LS6_1	Innate immunity and inflammation
LS6_2	Adaptive immunity
LS6_3	Phagocytosis and cellular immunity
LS6_4	Immunosignalling
LS6_5	Immunological memory and tolerance
LS6_6	Immunogenetics
LS6_7	Microbiology
LS6_8	Virology
LS6_9	Bacteriology
LS6_10	Parasitology
LS6_11	Prevention and treatment of infection by pathogens (e.g. vaccination, antibiotics, fungicide)
LS6_12	Biological basis of immunity related disorders (e.g. autoimmunity)
LS6_13	Veterinary medicine and infectious diseases in animals
LS7	**Diagnostic Tools, Therapies and Public Health:** Aetiology, diagnosis and treatment of disease, public health, epidemiology, pharmacology, clinical medicine, regenerative medicine, medical ethics
LS7_1	Medical engineering and technology
LS7_2	Diagnostic tools (e.g. genetic, imaging)
LS7_3	Pharmacology, pharmacogenomics, drug discovery and design, drug therapy
LS7_4	Analgesia and Surgery
LS7_5	Toxicology

LS7_6	Gene therapy, cell therapy, regenerative medicine
LS7_7	Radiation therapy
LS7_8	Health services, health care research
LS7_9	Public health and epidemiology
LS7_10	Environment and health risks, occupational medicine
LS7_11	Medical ethics
LS8	**Evolutionary, Population and Environmental Biology:** Evolution, ecology, animal behaviour, population biology, biodiversity, biogeography, marine biology, ecotoxicology, microbial ecology
LS8_1	Ecology (theoretical and experimental; population, species and community level)
LS8_2	Population biology, population dynamics, population genetics
LS8_3	Systems evolution, biological adaptation, phylogenetics, systematics, comparative biology
LS8_4	Biodiversity, conservation biology, conservation genetics, invasion biology
LS8_5	Evolutionary biology: evolutionary ecology and genetics, co-evolution
LS8_6	Biogeography, macro-ecology
LS8_7	Animal behaviour
LS8_8	Environmental and marine biology
LS8_9	Environmental toxicology at the population and ecosystems level
LS8_10	Microbial ecology and evolution
LS8_11	Species interactions (e.g. food-webs, symbiosis, parasitism, mutualism)
LS9	**Applied Life Sciences and Non-Medical Biotechnology:** Applied plant and animal sciences; food sciences; forestry; industrial, environmental and non-medical biotechnologies, bioengineering; synthetic and chemical biology; biomimetics; bioremediation
LS9_1	Non-medical biotechnology and genetic engineering (including transgenic organisms, recombinant proteins, biosensors, bioreactors, microbiology)
LS9_2	Synthetic biology, chemical biology and bio-engineering
LS9_3	Animal sciences (including animal husbandry, aquaculture, fisheries, animal welfare)
LS9_4	Plant sciences (including crop production, plant breeding, agroecology, soil biology)
LS9_5	Food sciences (including food technology, nutrition)
LS9_6	Forestry and biomass production (including biofuels)
LS9_7	Environmental biotechnology (including bioremediation, biodegradation)
LS9_8	Biomimetics
LS9_9	Biohazards (including biological containment, biosafety, biosecurity)