

## **Lighting Engineering Center – LEC**

an excellence center for consultancy and continuing education in the lighting field  
in direct link with the needs of the labour market

### **Main objective**

Development of a centre of excellence in lighting field in North-Western Romania  
in direct link with the needs of the labor market and the improvement of the university  
curricula

### **Specific objectives**

To support graduates contacts with enterprises and offices in the lighting field  
to offer continuous formation for employees with lighting activities

To create an information network with a large database and communication facilities  
Symposiums and Seminars for the presentations of the main companies involved in lighting  
and electrical installations

Round tables targeted to the Energy Efficiency in Lighting and Quality aspects

Postgraduate short courses in Management of Lighting and Electrical Installations

Editing the Ingineria Iluminatului review  
and organization of the International Conferences ILUMINAT

Dissemination of the results achieved through European projects and programs

Cooperation with Romanian National Committee on Illumination - CNRI -  
and Commission Internationale de l'Eclairage – CIE

Scientific, curricula and research cooperation with Lighting Laboratories, Departments  
and Research Centres from the national or abroad universities, for developing the  
participation at international networks LIGHT and CIE-EDU

**Lighting Engineering Center - LEC** – was created following the Tempus-Phare programme CME-03551-97 [December 15, 1998 – March 14, 2000] – see the web site <http://bavaria.utcluj.ro/~lec>.

Co-ordinated by Professor Florin POP, the CMEs project entitled *Lighting Engineering Centre - LEC* involved the university lighting laboratories from Barcelona – Professor Ramon SAN MARTIN, the contractor of the project, Helsinki – Professor Liisa HALONEN and Naples – Professor Luciano DI FRAIA. Its milestone was the creation of an excellence centre for consultancy and continuing education in lighting field in direct link with the needs of the labour market, to support the process of university reform at management level with a view to develop managerial and administrative skills, taking into consideration: - the undergraduates' problems concerned with their further placement on the job market; - the employees' problems concerned with a possible redistribution of the work force caused by the current economy restructure; - the necessity to refurbish almost entirely old lighting installations; - the achieving a permanent co-operation between university and a specific economic sector, one of the ways that increase the reform process in Romanian education and economy system in one of their aspect, the lighting field.

The LEC activity was presented in the previous issues of the review (1 – 11), beginning with **April 25, 2000** when its establishment was approved by the University Senate Council until **July 2003**, the printing date of the issue no. 11 (Summer) 2003 (see the full collection of the review in pdf format, on the web site)

**22 – 23 September 2003** *MOELLER solutions in the low voltage electric network field – the most recent equipment*, a Technical Seminar in cooperation with the S.C. MOELLER Romania S.R.L.

**9 – 22 October 2003** Dr. Florin POP was invited to participate at the International Seminar **Advanced Daylighting and Electric Lighting Systems in Architecture**. The Seminar was organized by the Light & Architectural Environment Laboratory – LAEL, Kyung Hee University, Seoul, Korea, director Prof. dr. Jeong Tai KIM. Professor Florin POP presented the conferences "Recent Research Trends on Advanced Daylighting System", for the Master students in Architecture and "Lighting in Eastern Europe: A Romanian Case Study", for the LAEL members.

Two agreements for university cooperation were signed: The Memorandum of Understanding between the College of Architecture and Civil Engineering, Kyung Hee University, Korea, and the Universitatea Tehnică din Cluj-Napoca, Romania and (signed by Prof. Florin POP on behalf of the Rector of U.T.C.-N.) and The Memorandum of Understanding between Light & Architectural Environment Laboratory, Kyung Hee University and Lighting Engineering Center, Universitatea Tehnică din Cluj-Napoca. The activity of Professor Florin POP was recognised with a diploma - Award of Appreciation.

Dr. Koichi IKEDA, Professor of Illuminating Engineering, Department of Electrical Engineering, Faculty of Science and Technology hosted a short professional visit at the Tokyo Rika Daigaku, the Tokyo Electric Power Company – TEPCO and the NAIS, a very interesting Show-Room related with the energy efficient systems in buildings.

Mr. Fuam GUMIN hosted a short but very interesting and useful visit at his own company GFL Lighting and at the FUDAN University of Shanghai.

The new links for cooperation, the reciprocal knowledge of lighting professionals, the visit on its whole were very distinguishing, due to the kindness of our hosts, and, especially, of the Professor Jeong Tai KIM. Professional and personal contacts were established, creating a great opportunity for a long and profound cooperation between the university staff and students.

Dr. **Florin POP** and Dr. **Dorin BEU** contributed to the XXXVIII-th National Conference on Installations (Building Services) – National Symposium on Light and Lighting, Sinaia, October 2003, and the Inter-Ing 2003 Conference of the University of Târgu Mureş, October 2003, the International Symposium on Lighting – Quality Solutions for an Efficient Lighting, Bucharest, September 2004, the XII National Conference on Lighting *Light '2004* 15–17 June 2004, Varna, and the IEECB '04 Conference, Frankfurt am Main, 21-22 April 2004.

**INGINERIA ILUMINATULUI – Lighting Engineering** review, with a half-yearly appearance, is edited by the consortium of the Technical University, ELECTRICA Local Distribution Branch – Transilvania Nord, and MEDIAMIRA Printing House. Its scientific presentation and content is targeted to the continuing education in the lighting field, without any insertion of the commercial advertisings inside of its pages.

LEC members are involved in working-out of different **lighting systems optimization studies** and **lighting design projects** for local owners. An interesting study was initiated by the City Council in May 2004 for **the rehabilitation of pedestrian lighting in residential areas of Cluj-Napoca city** and conducted by the Lighting Engineering Center of the Technical University of Cluj-Napoca in two areas. The aims of this study are: a) to survey the existing situation; b) to present the new European and national regulations concerning this matter; c) to propose a modern energy efficient system, and d) to generate specific GIS maps of the whole lighting system and electric network. The public lighting for pedestrian alleyways or for mixed traffic pedestrians/vehicles between blocks of flats was made in the same time with the urban structure. For this reason the lighting system was designed and installed between 1960-1990. The existing system presents many deficiencies and cases of destruction determined by vandalisms, physical and technical use, inadequate protection, and low quality of lighting equipment. Proposals for a modern lighting system are targeted to obtain a high quality photometric environment and energy efficiency. The design is based on the quality requirements stipulated on the Romanian norms NP 062-02 and SR EN 60598 and European or CIE guidance. The presumed costs for the rehabilitation of pedestrian lighting in two residential districts of Cluj-Napoca – Grigorescu and Gheorghieni - are at about Euro 146,000, with respect to the rehabilitation of old or broken down equipment (electric cables and boxes, columns, lamps, luminaires and accessories) and to the extension of the lighting systems/network. The proposed systems will use an installed power  $P_{inst. rehabilitated}=75.492$  kW for 613 rehabilitated points and 319 new ones with HSE (Sodium) 70 W lamps instead of the used power  $P_{real}=126.828$  kW of old lamps.

On the university cooperation field, there is continuity under the frame of the UE institutional university programmes SOCRATES - ERASMUS. There are signed Bilateral Agreements of cooperation between Universitatea Tehnică din Cluj-Napoca (Dr. Florin POP, Professor, Dr. Dorin BEU, Reader) and Helsinki University of Technology (Professor Liisa HALONEN, Lighting Laboratory), Universitat Politecnica de Catalunya (Professor Ramon SAN MARTIN, Estudios Luminotecnicos), and University of Liverpool (Dr. David CARTER, Reader, Lighting Research Unit).

The Lighting Engineering Center LEC is developing its activity on the Lighting and Electrical Installations Laboratory of the Building Services Department of the Technical University of Cluj-Napoca. The rehabilitation and technical modernization of its space was partially financed by the Tempus-Phare programme, the university resources, the funds received on the research grants, and postgraduate courses and sponsorships of lighting and electric installations companies and of former students