

когда в октябре 1997 года на конференции в г. Ульсане на секции авиационно-космической техники обсуждались некоторые аспекты сотрудничества по космическому материаловедению, то кроме признания достижений нашей лаборатории в этом направлении, чувствовались американская школа (корейские ученые стажировались в НАСА) и настороженность. Хотя для начала такие результаты являются вполне нормальными, и можно найти в будущем пути к научно-техническому сотрудничеству.

возможности экспериментального оборудования по имитации условий космоса. В настоящее время наши предложения прорабатываются и изучаются.

Южная Корея традиционно в вопросах стратегического значения сотрудничает с США. Поэтому, когда в октябре 1997 года на конференции в г. Ульсане на секции авиационно-космической техники обсуждались некоторые аспекты сотрудничества по космическому материаловедению, то кроме признания достижений нашей лаборатории в этом направлении, чувствовались американская школа (корейские ученые стажировались в НАСА) и настороженность. Хотя для начала такие результаты являются вполне нормальными, и можно найти в будущем пути к научно-техническому сотрудничеству.

Думаю, что прилагаемые усилия по налаживанию контактов позволят в ближайшее время сотрудничать на контрактной основе, что позволит развивать исследования и готовить научно-технические кадры по радиационному и космическому материаловедению.

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The last year was fruitful in regard to the cooperation with the foreign partners, which basis was researches and experience in training of the experts. By the base for such training was the laboratory "Study of radiation effects in aerospace materials", created in 1968 under the initiative and on money resources of the NPO "Energy" (nowadays - Space-rocket corporation "Energy"). On its basis in

1983 on the subfaculty the preparation of the engineers and investigators with specialization "Radiation and space material science" was opened.

Despite lacking of base financing and contracts with the enterprises of the aerospace space complex, the research works are constantly conducted on initiative principals by the students, post-graduate students and aspirants of the subfaculty. Just recent 5 years the results were received, having the important fundamental and applied significance for radiation and space material science, and basically published in "Journal of Advanced Materials" (Cambridge). In 1997 as a result of competition the totality of these works won the first prize of the magazine. The successes have got an international recognition, especially in the countries of South-East Asia, where the development of space is in an initial stage, and our experience, our scientific and applied development are for them the reference points in the choice of a direction for research works. It concerns such countries as China, India, South Korea.

The close cooperation with China has begun since February, 1997, when at the request of Astronaut's College at Kharbin polytechnical institute I was invited to lecture for the professors of the institute and to discuss forms of co-operation. On results of this trip the agreement on scientific cooperation was made. In February, 1998 the delegation of 3 professors of Kharbin polytechnical institute worked for 4 days at our university. The forms of long-term cooperation on many directions were planned. For the near future the arrangement on the following forms of cooperation is achieved:

- Manufacture in TPU of the imitators of outer space condi-

tions with reproduction of Solar wind plasma, ionosphere plasma, and electromagnetic radiation of the Sun (the contract will come into play in January, 1999).

- Transfer of the following techniques to Kharbin polytechnical institute: - accelerated testing of space technology materials; - replacement of spectra of the charged particles by monoenergetic beams; - software for analysis of degradation and forecasting of serviceability of materials (the contract will be signed in May, 1998).
- Publication in Chinese of the course of lectures and methodical instructions to laboratory works "Radiation and space material science", developed earlier in a TPU, and also the methodical support on preparation of the engineers with such specialization (the contract presumably will be signed in May, 1998).
- Training the Chinese students, post-graduate students, and practical study of a teacher in laboratory "Radiation and space material science" (since January, 1999).
- It is supposed to test Chinese materials for space engineering in our laboratory before manufacture, delivery and set-up of the imitators of outer space conditions, developed for them. A plan to cooperate with India was determined by the fact, that this country till the summer of 1997 has launched 5 satellites, and for this country the development of reliable materials for space engineering and the forecasting of their serviceability in conditions of orbital flight is an essential scientific and technical task. The absence of contacts with Indian scientists and firms was the reason for applying into a department of science and engineering of Indian embassy in Moscow with the proposal on cooperation. The

embassy has helped to find the interested persons, and we have received the qualified inquiry about our development and capability of the experimental equipment on imitation of outer space conditions. Nowadays our proposals are studied and examined.

South Korea traditionally cooperates with USA in questions of strategic meaning. Therefore, when in October, 1997 at the conference in Ulsan, on section of aerospace engineering some aspects of cooperation on space material science were discussed, besides a recognition of achievements of our laboratory in this direction, the American school (Korean scientists were on practice training in NASA) and circumspection were noticeable. Though for the beginning such results are quite normal, and it is possible to find ways to scientific and technical cooperation in the future.

I believe, that the undertaken efforts on establishing contacts will allow in a near future to cooperate on a contract basis, that will permit to develop researches and to prepare the scientific and technical personnel on radiation and space material science.

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Aerospace technologies: cooperation in Asia