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2010 Nobel Prizes Have Been Awarded

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2010 Nobel prizes were awarded in October in Stockholm, Sweden by the Royal Academy. In the field of Medicine and Physiology, Robert G. Edwards received the award “for the development of *in vitro* fertilization.” *In vitro* fertilization, or IVF, is a process by which the sperm fertilizes the egg inside a test tube, and the fertilized zygote is implanted into another female’s uterus. This procedure has been used for treating infertility, cloning animals, and creating mouse models of genetic disease. In Physics, Andre Geim and Konstantin Novoselov shared an award for “groundbreaking experiments regarding the two-dimensional material graphene.” Graphene is a one-atom thick planar carbon molecule, in which all of the carbons have sp^2 hybridization. The carbon atoms are arranged in a honeycomb fashion. Graphene is a useful compound in nanomaterials. Geim has a paper published with his hamster in 2001. In Chemistry, the award was shared between Richard F. Heck, Ei-ichi Negi-



Robert Edwards

Andre Geim

Richard Heck

shi, and Akira Suzuki for “palladium-catalyzed cross couplings in organic synthesis.” Palladium catalyzed coupling reaction is a synthesis reaction by which two hydrocarbon reactions are joined with the aid of palladium. This method is widely used in the industry, which uses less expensive metals such as nickel or copper instead of palladium.