

### **Conducting polyparaphenylene prepared by high temperature doping**

**Golovtsov, Igor; Öpik, Andres** Proceedings of the Estonian Academy of Sciences. Engineering 1996 / 1, p. 107-123: ill

### **Development of conductive polymer materials for anti-corrosion and sensor applications**

**Öpik, Andres; Golovtsov, Igor; Idla, Katrin; Sõritski, Vitali** Stambiamolekuliu junginiu chemija ir technologija = Polymer chemistry and technology 1997 / p. 133-142

### **Doping mechanism for polyparaphenylene**

**Golovtsov, Igor; Öpik, Andres** Kemia 95 : Finnish Chemical Congress and Exhibition and Nordic Polymer Meeting 1995, Helsinki, 14-16 Nov., 1995 : abstracts 1995 / p. 53-54

### **Effect of polymer layer deposition and annealing on photovoltaic properties of CuInS<sub>2</sub>/polymer structures**

Verbitsky, Anatoly; Vertsimakha, Yaroslav; Studzinsky, Sergei; **Bereznev, Sergei; Golovtsov, Igor; Kois, Julia; Öpik, Andres;** Lytvyn, Oksana Proceedings of the Estonian Academy of Sciences 2009 / 1, p. 18-23 : ill

### **Electrical properties of polyaniline and polypyrrole bilayer structures**

**Bereznev, Sergei; Golovtsov, Igor; Öpik, Andres** Synthetic metals 2001 / 1/3, p. 1415-1416

### **Electrical properties of polyaniline and polypyrrole bilayer structures**

**Bereznev, Sergei; Golovtsov, Igor; Öpik, Andres** International Conference on Science and Technology of Synthetic Metals : 15th to 21st of July 2000, Gastein, Austria : book of abstracts 2000 / p. 63-MonH138

### **Electrodeposited (Cu-In-Se)/polypyrrole PV structures**

**Bereznev, Sergei; Kois, Julia; Golovtsov, Igor; Öpik, Andres; Mellikov, Enn** Thin solid films 2006 / p. 425-429 : ill

### **Halogenide kõrgtemperatuurne difusioon polüparafenüleenis = High temperature diffusion of halogens in polyparaphenylene**

**Golovtsov, Igor; Öpik, Andres** XVII Eesti keemiapäevad : teaduskonverentsi ettekannete referaadid = 17th Estonian Chemistry Days : abstracts of scientific conference 1996 / lk. 31-32 [https://www.ester.ee/record=b1070511\\*est](https://www.ester.ee/record=b1070511*est)

### **High temperature diffusion of halogens and alkali metals into polyparaphenylene**

**Golovtsov, Igor; Öpik, Andres** International Conference on Science and Technology of Synthetic Metals : ICSM'98 : July 12-18, 1998, Montpellier, France : book of abstracts 1998 / p. 204

### **High temperature diffusion of halogens and alkali metals into polyparaphenylene**

**Golovtsov, Igor; Öpik, Andres** Synthetic metals 1999 / p. 463-464: ill

### **High temperature doped polyparaphenylene as electrode solutions**

**Golovtsov, Igor; Öpik, Andres** EUROMAT 99 : European Congress on Advanced Materials and Processes : Munich, Germany, 27-30 September 1999 1999 / reference 438 F.4-P18

### **Investigation of the conductivity stability of doped polyparaphenylene**

**Golovtsov, Igor; Öpik, Andres** 24th Estonian Chemistry Days : abstracts of scientific conference 1998 / p. 18

### **Modification of conductive properties and processability of polyparaphenylene, polypyrrole and polyaniline**

**Golovtsov, Igor** 2005 [https://www.ester.ee/record=b2097077\\*est](https://www.ester.ee/record=b2097077*est)

### **Multilayer structures based on polyparaphenylene thin films**

**Golovtsov, Igor; Bereznev, Sergei; Öpik, Andres** Baltic Polymer Symposium 2009 : Ventspils, Latvia, September 22-25, 2009 : programme and proceedings 2009 / p. 14

### **Multilayer structures based on polyparaphenylene-polypyrrole blend semiconductive films deposited on light transparent substrates**

**Golovtsov, Igor; Öpik, Andres** Proceedings of Baltic Polymer Symposium 2002, Nida, September 18-20, 2002 2002 / p. 156-161 : ill

### **Polüparafenüleeni/polüüpürrooli mitmekihilised struktuurid**

**Golovtsov, Igor; Öpik, Andres** XXV Eesti keemiapäevad : teaduskonverentsi ettekannete referaadid = 25th Estonian Chemistry Days : abstracts of scientific conference 1999 / lk. 31

### **Polüüpürrooli-polüparafenüleeni komposiitkilede ja polüüpürroolile omaduste uurimine**

**Golovtsov, Igor; Öpik, Andres** XXVIII Eesti keemiapäevad : teaduskonverentsi ettekannete teesid = 28th Estonian Chemistry Days : abstracts of scientific conference 2002 / lk. 22-23

**Polypyrrole-polyparaphenylene blend films electrochemically deposited onto light transparent substrates**

**Golovtsov, Igor; Öpik, Andres** International Conference on Science and Technology of Synthetic Metals : book of abstracts 2002 / p. 32

**Temperature dependence of conductivity for polyparaphenylene**

**Öpik, Andres; Nirk, Tiit; Kerm, Karin; Golovtsov, Igor** Kemia-kemi = [Finnish chemistry] 1991 / p. 985

[https://www.ester.ee/record=b1201067\\*est](https://www.ester.ee/record=b1201067*est)

**Temperature-dependent conductivity of polyparaphenylene/polypyrrole multilayer structures**

**Golovtsov, Igor; Öpik, Andres** International Conference on Science and Technology of Synthetic Metals : 15th to 21st of July 2000, Gastein, Austria : book of abstracts 2000 / p. 58-MonH102

**Temperature-dependent conductivity of polyparaphenylene/polypyrrole multilayer structures**

**Golovtsov, Igor; Öpik, Andres** Synthetic metals 2001 / 1/3, p. 1363-1364

**The conductivity mechanism of polyparaphenylene, doped with halogens and alkali metals**

**Öpik, Andres; Golovtsov, Igor; Lobanov, A.; Kerm, Karin** Proceedings of the International Conference on Synthetic Metals, Göteborg, 1992 1992 / p. 311

**The conductivity mechanism of polyparaphenylene, doped with halogens and alkali metals**

**Öpik, Andres; Golovtsov, Igor; Lobanov, A.; Kerm, Karin** Synthetic metals 1993 / 55-57, p. 4924-4939

**The evaluation of ethylene glycol and propylene glycol gas chromatography method performance**

Urbala, R.; Zemtsovskaja, Galina; Lotova, O.; **Golovtsov, Igor** 18th IFCC-EFCC European Congress of Clinical Chemistry and Laboratory Medicine : Innsbruck, Austria, June 7-11, 2009 2009 / p. S389

**The kinetics of high temperature doping of the polyparaphenylene**

**Golovtsov, Igor; Öpik, Andres** Tallinna Tehnikaülikooli Toimetised 1994 / lk. 35-48: ill

**Thermodynamic modeling for investigation of the polyparaphenylene**

**Golovtsov, Igor; Öpik, Andres** Proceedings of Baltic Polymer Symposium 2001 : Oct. 11-12 in Tallinn 2001 / p. 67-73 : ill

**Thin composite films consisting of polypyrrole and polyparaphenylene**

**Golovtsov, Igor; Bereznev, Sergei; Traksmaa, Rainer; Öpik, Andres** Thin solid films 2006 / 19, p. 7712-7715 : ill